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The *Pilot Radio,* after landing inside the reefs on the first airplane flight to Bermuda, with her "gas" gone to the last drop, gets fuel brought to her from St. Georges.

The First Airplane Reaches Bermuda

How the "Pilot Radio" Blazed the Trail Across the Gulf Stream to the "Onion Patch"

By ZEH BOUCK

WITH the Bermuda races in the immediate offing, when a large fleet will set sail for the "Onion Patch," the story is aptly told of the three April fools in a tub — W. H. (Bill) Alexander, Captain Lewis A. Yancey, and the writer. On the morning of April first, at 9:37 to be exact, the airplane *Pilot Radio* took off from Flushing Bay, Long Island Sound, for the Bermuda Islands — not always the easiest place to find by boat and, as our navigator will tell you, a tricky dot in the ocean to find by air. The take-off itself partook of the inauspiciousness of the day, and it was not until the fifth attempt that we were able to lift her — after draining approximately fifteen gallons of gasoline, throwing overboard a kit of spare pontoon parts and jettisoning our anchor. The Sound was glassy calm and stuck to the floats like glue. It was the rolling wake of a Clason Point ferry and the churning froth behind a friendly and coöperative seaplane that finally got us up on the step and to flying speed.

The airplane was a Stinson SM-1F six-passenger monoplane modified especially for the Bermuda flight and motored with the Wright J-6 300 h.p. Whirlwind. The *Pilot Radio* was equipped with Edo floats, and double wing gas tanks, giving a total gas capacity of 200 gallons, or, conservatively estimated, fuel for twelve hours' cruising at 100 miles per hour. Provision was made for replenishing oil from within the cabin. We carried five days' rations. The radio room was located just abaft the main cabin, and was comfortably equipped with short and long wave transmitting and receiving apparatus, covering one frequency in all definitely demarcated bands between 20 and 1100 meters. The plane is ordinarily used as a flying laboratory by the Pilot Radio and Tube Corporation of Brooklyn, and the radio equipment was designed and built in their laboratories. The pyralin top over the cabin was arranged so that it could slide back, opening the top of the plane for the taking of sights. (It is needless to point out to the experienced navigator that the refraction occasioned by even a thin sheet of practically any transparent material would be sufficient to render the best sights hopelessly inaccurate.)

The labors of the crew were definitely assigned and agreed upon. Alexander was to fly the plane and nothing else. Yancey's job was navigation, and mine was to maintain radio communication with radio station WHD, and assist the navigator occasionally by taking drift sights, the mountings for the Pioneer drift and speed indicator being located outside of the radio shack window. An interesting point is that, in an emergency, any one of us three could have pinch-hit for another.

As Bill cleared the East River bridges, the rest of the crew went into action. Lon (his name in its entirety being Lewis Alonzo Yancey) directed Bill to swing around over a string of buoys in Lower New York Bay which, by luck, line up exactly 138 degrees true — the course to Bermuda. I crawled back into the radio cabin, settled myself comfortably for a day's work, reeled out the antenna, and established communication with the New York station. A few minutes later we took our departure from Scotland Lightship. At noon we were over the Gulf

After pratique had been granted, and official inspection finished, the plane was towed across Hamilton Harbor to an anchorage in Pitts Bay.

Stream, with a noticeable rise in temperature, and increased bumpiness which added considerably to the difficulties of taking sights.

Yancey navigated by the Marc St. Hilaire method, following the usual shipboard procedure. The sights were taken with a bubble sextant, and lines of position established. Successive lines were brought up in accordance with the intervening dead reckoning. Of course, sights were taken much more frequently than on shipboard, as our position was changing at a rate of about 85 nautical miles per hour with a correspondingly rapid variation in the sun's azimuth. Twenty-four sights were taken between the time of our departure from Scotland Lightship and sundown. Three Longines chronographs were used as chronometers. In passing, it may be remarked that taking sights from an airplane with a bubble sextant is a ticklish and exasperating proposition, quite comparable to similar efforts on board a 36-footer.

And so passed the day, with Bill fighting a cross wind that gave us at times a 20-degree drift and slowed us down considerably below our normal cruising speed.

By five o'clock it became apparent that we could not make the Islands before dark, and we decided to set her down on the ocean rather than risk a landing in Hamilton Harbor at night. The sea looked calm from 1500 feet, and Dr. Kimball, our Palladium of the weather bureau, assured us of continued good weather for another 24 hours.

And set her down we did — Bill doing one of the finest flying jobs it has ever been my pleasure to witness and my discomfort to experience. A fair ground swell was running, heaving in no particular sequence, and water is a hard thing to hit at 60 miles per hour. That the pontoons stood the gaff still remains amazing to me.

The moment *Pilot Radio* came to rest, Yancey climbed down on the floats and threw out two ten-quart pails for a sea anchor. With absolutely no wind these were useless for the first six hours, and half the time we were broached to the swell, rolling one minute, pitching the next — a motion that was disconcerting, to say the least.

We alighted on the ocean at 6:00 P.M. New York time — 7:00 o'clock Bermuda time, and just dark. By rigging up an emergency antenna we could have maintained communication with New York throughout the night, but it seemed useless; so, before coming down, we told WHD to sign off until five A.M. the following morning.

We maintained three watches throughout the night. Mine was the first. At nine o'clock, just as the stingy sector of the moon dipped below the water, I first sighted the lights of the *Lady Somers*, bound from Bermuda to Halifax. We saw them again two hours later, and at 1:00 A.M. decided to signal her on the possibility that she might be a boat out from Bermuda looking for us.

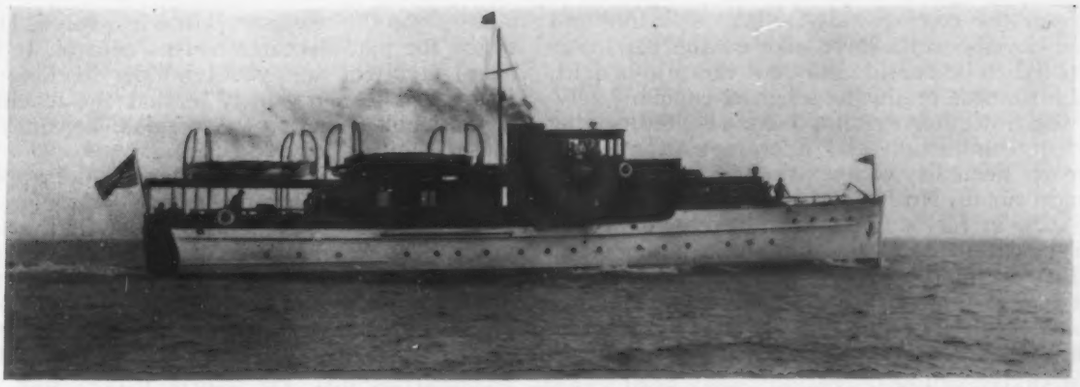
Lon opened the top of the plane and fired three Very cartridges at 15-minute intervals. At the end of half an hour she was noticeably nearer, and we could tell by her mast lights that she was heading for us. When these lights worked their way out of line, we would give her another shot, and a second or two later would see her lights swing around dead for us again. We signaled her first with blinker, and, shortly after, when she hove-to at 3:00 A.M., we hailed her.

An unmistakeably British voice from the deck wanted to know if we wished aid, and seemed rather amazed when informed that we did not. We requested that they report us "okay," and proceeding to Bermuda at sunrise, and then asked for the bearing and distance to Bermuda. There was a five-minute pause while they ran up their dead reckoning, and then the voice from the deck informed us that we were 60 miles north of Bermuda, true. This checked very closely with our own calculations. Then we heard the bells in the engine room, and the *Lady Somers* crept away into the dark.

At daybreak I cleaned up the cabin, the contents of which had been rather indiscriminately tossed about during the night, while

(*Continued on page 134*)

Pilot Radio, **showing Edo floats on which she alighted at sea 60 miles from Bermuda, taking off successfully the following morning.**



A Diesel yacht for Great Lakes cruising. *Tannis*, owned by J. B. Berryman, of Chicago. Powered with two 120 h.p. Kahlenberg motors.

Yacht Diesel Power of Today

Refinements Achieved in Recent Years by American Manufacturers Have Made This Form of Power Available for High-Speed Craft

By T. Orchard Lisle

PROGRESS in any branch of engineering is gradual. Development to the stage of commercial success is achieved only through years of practical experience under grueling conditions of service. By reason of the complex and exacting nature of the work and the care and skill required, engineering development is necessarily slow. Its rate of advance is governed largely by the amount of financial investment and technical talent behind the machine. Without large research investments the motion of engineering design is very slow indeed. Another factor that may either retard or expedite advancement is the attitude of the potential user. In this statement is to be found the underlying reason for the delay in the more general adoption of the Diesel oil engine — with its great economic promises — for swift pleasure craft. Despite the fact that the American Diesel made its first commercial appearance in land work over 30 years ago, immediately following its invention in Germany, it is only within the last few years that yachtsmen and naval architects who specialize in yacht work have made extensive use of this form of power. And, incidently, it is only within the same period that the Diesel engine has been able to meet their requirements adequately.

At the start, few owners of yachts were willing to take the chance of using Diesel engines. The bridge that existed between the crude, heavy workboat engine and the ultra-refined yacht power plant was too wide. Then too, an insufficient number of operating engineers had yet been trained to care intelligently for a Diesel outfit.

But as time passed yacht owners, one by one, could not help being impressed with the particular advantages of Diesel power continually being demonstrated by large and small commercial craft. These earlier yacht owners who did install Diesel engines gallantly put up with the inconveniences of the weight and over all machinery length accompanying slower revolutions, of vibration, inexperienced operators, and with the frequent mechanical changes or adjustments that sometimes interfered with cruising plans. The patience of these pioneers meant that each succeeding installation brought steady improvements in design and construction. Higher operating speeds, less weight, reduced over all size, greater reliability, elimination of vibration and noise, all were features of the refinements produced. Yet, strange as it may seem, the efficiency of the original Diesel principle was so high that in all these years fuel consumption has improved only slightly in comparison with the other progress accomplished. Nevertheless, no other form of power has yet approached its economy.

Well I remember, in 1914, when I was power-editor of a yachting magazine, trying to create interest among owners of large steam yachts in the Diesel engine. How exultant I was to be able to attend the 28-hour "sea" trial that summer of Francis Hardy's 110-footer *Aeldgytha* on Lake Michigan. She then possessed the proud title of being America's largest Diesel yacht. Designed by Morris Whittaker, she was powered by two 180 b.hp. four-cycle engines turning at 450 r.p.m. and built by James Craig. "Jim" was a splendid engineer of the old school, and "put his all" into oil engine development, but he did not have the huge capital necessary for prolonged Diesel research. His engine factory is no more. It is, however, to such earnest pioneers as Craig that today's splendid progress is due. His engine was a substantial step on the route to the light weight and high speed required to propel yacht hulls. There were also other pioneer yacht engine builders, some of whom now prefer to let the story of their early attempts remain buried with the past. Still others have continued with steady development and now are leaders in the field.

Developing the Diesel from a workboat engine, or from a submarine engine, to a design ideal for the comparatively light and swift yacht or express cruiser, has not been accomplished in a single step. Numerous factors have entered into the processes of engineering refinement. The metallurigcal engineer has played quite an important part. In this scientific work the experiences of automobile and aeroplane experts have been invaluable in coördination with those of oil engine designers. Castings have been produced capable of withstanding the great stresses formed by the particular pressures and widely varying temperatures of Diesel cylinders. Simultaneously, the design of combustion chambers and cylinder castings have been vastly improved, permitting better cooling, more even expansion and contraction, and avoidance of pockets with their accumulation of

deposits from the cooling water. These scientific and mechanical developments have allowed the particular parts involved to be considerably cut down in weight, doing much towards producing a lighter engine.

Better fuel injection systems have resulted, giving more perfect combustion and finer regulation at all loads. Greater flexibility of operation consequently has been brought about. No small problems were involved. Exacting care in fuel pump design and manufacture has been essential, as with the finest chronograph making. Bear in mind that in some instances the little pump has to deliver, under 2000 to 8000 lbs. per square inch pressure, a drop of fuel (0.00061 cubic inch to be exact), timed to 0.0001 second, and this evenly to each of four to twelve cylinders, so that there shall be no more than two per cent variation in the load developed in all of them. Pump manufacturing tolerances are 0.0001 inch, so exacting are requirements. With this function properly taken care of, there still remained the difficult problem of combustion, as this minute quantity of oil must be sprayed into the cylinder, mixed with the air and burned in 0.002 to 0.003 of a second, according to the engine revolutions.

One of the most important engineering developments that has been made is the elimination of highly compressed air for fuel injection, and the substitution of pump, or airless, injection. Not only has this shortened and lightened the engine, but it has dispensed with the old three-stage air compressor, inter-coolers, and the high-pressure steel storage bottles which belonged to the system. The change was so radical, and at first offered so many obstacles to good combustion at all loads, that a number of manufacturers did not accept the idea willingly. In fact, many big commercial Diesels are still using air for fuel injection, and there is no question that it has many merits of its own; but the consensus of engineering opinion is that the advantages in general of airless injection offer more in the long run, especially for high-speed types.

Power per cylinder output has been increased with some engines by supercharging, which gives a greater volume of air than is normally drawn into the cylinder on the down, or intake, stroke of the piston, allowing more fuel to be injected and combusted effectively and cleanly. Not many American engine builders have yet turned to super-charging, but the practise is likely to grow, just as it did with aeroplane motors. To show what is possible with super-charging, I shall refer to a foreign engine, the Beardmore, which design now is being built in this country. The Beardmore 12-cylinder, 12-inch by 12-inch Vee-type locomotive engine developed 1500 b.hp. at 900 r.p.m. without super-charging. This power, with the aid of a super-charger, was increased to 2000 b.hp. without any increase of speed.

The use of aluminum alloy pistons has been a great aid to the high speed yacht engine. Among its advantages are the reduction of inertia forces, more rapid dispersement of heat, permitting higher piston speeds, and reduction of vibration tendencies.

While all these modifications and refinements were being made, designers were gradually increasing engine revolutions. As engine speeds increased, so were cylinder diameters reduced where only the same power outputs were required. For higher powers it was practical to increase cylinder sizes without running into operating difficulties. With the smaller cylinder sizes, per ratio of power output, came lighter fixed and moving parts, greatly reducing over all size and weight. These things, however, meant exhaustive study in the problems of balancing to avoid vibration. Not only in the engine factory was this necessary, since it involved factors over which the manufacturer had no control. It meant the naval architect and yacht builder working in accord with the Diesel designer, so that the machinery as a whole would function in complete harmony with the hull when installed and running.

There is one interesting step in the application of Diesel power that has made considerable progress, and is likely to show even greater advance in the near future, namely, — Diesel-electric drive! To my mind it is the answer to the yacht owner who still believes that steam is the only system of propulsion for the very large, high-powered ocean yacht. So far, Diesel-electric drive has made its greatest headway with commercial vessels, locomotives, etc. Yet nearly every large yacht has Diesel-electric equipment for engine room auxiliary powers. When utilized for propulsion purposes, one, two, three or more engines are coupled to generators. The latter furnish D.C. current to reversing electric motors installed in the stern of the boat, and direct-connected to single or twin-propeller shafts.

My opinion is that before long Diesel-electric drive will be far more widely adopted for yachts, and for several practical reasons. In the first place, the Diesel engine speed can be increased as rapidly as our designers and builders gain additional knowledge; these higher engine revolutions can be made while propeller revolutions are still maintained at their most efficient speed for the lines of individual yacht hulls. Putting it another way, with this system propeller speed is independent of engine speed and *vice versa*. In this way a distinct gain in the yacht's speed may be secured without using higher power.

As power generation for main and auxiliary purposes will not exceed one-half cent per Kw. hour, operation of a Diesel-electric yacht is very reasonable. As propeller reversing is done by the electric motors, Diesel engine construction is thereby simplified by the elimination of all integral reversing mechanism, and the size of the maneuvering storage tanks, consequently, is reduced. Only enough air for starting is needed, assuming the main engines are of the airless fuel-injection type.

I foresee that with unit powers ranging from 100 to 1000 b.hp., compact generating sets turning at 1500 and 1000 r.p.m., respectively, will be common practise within a few years. From two to four such sets, and possibly as many as six, will be installed per yacht. Take the case of the largest existing ocean yacht, a vessel of about 330 feet and 6000 shaft h.p. A Diesel-electric installation of six 1250 b.hp. engines turning at 1000 r.p.m. would give enough power to ensure of 6000 s.hp. in twin screws with ideal propeller conditions. Such a layout would be far more compact, and much lighter than any known form of steam power, aside from the smaller quantity of fuel needed to be carried.

Provided a yacht owner would shoulder a reasonable amount of responsibility, and demonstrate his patience by allowing a proper sea trial period, I am sure that reputable Diesel builders, in conjunction with one of our great electrical companies, would undertake a yacht installation of this character today. In this country a Treiber engine developing 3000 s.hp. at 700 revs. on a weight of but 63,900 lbs. (21 lbs. per hp.) is a noteworthy attempt to produce very high power at high speed for yachts. In Europe the most remarkable development of the high-speed, light-weight Diesel is the 50,000 s.hp. installation of the German "cruiser-annihilator" *Ersatz Preussen*, which weighs 17.2 lbs. per horse power. This particular Treiber engine is not yet in a yacht, and the results of the German warship are not yet revealed.

High speed goes hand in hand with electric drive, or electric transmission, as it may be called. As the engine speed increases, so decreases the practicability of direct connecting the Diesel to the propeller. Electric transmission becomes very necessary. The higher the speed, the smaller and shorter the Diesel-electric generating sets, enabling them to be arranged two, three or four abreast, or staggered, if desired. Smooth, vibrationless operation will be secured, because the more units there are the greater the tendency to entirely dampen possible vibrations. Pilot house control of propeller speed and direction is a simple matter with all sizes, from the smallest to the biggest yacht.

There is, of course, no defined or set rule for the machinery of yachts. Design of the hull and accommodation, the waters in which she will mainly operate, and individual ideas of the owner, are usually the determining factors. This holds good because a yacht is built for pleasure, and not for commercial purposes where economy and reliability of operation are paramount. Not all American Diesel builders specialize in yacht engines. More than half of them do not construct yacht engines at all. It may be informative to yachtsmen to know more about the leading designs, and about the marked advances they have recently made. While the following list does not include all types of American oil engines that have been fitted in yachts, it does incorporate those that have been more extensively identified with the movement.

Atlas-Imperial	Fairbanks-Morse	Standard
Buda	Hill	Treiber
Cooper-Bessemer	Nelseco	Washington-Estep
Cummins	Speedway	Winton

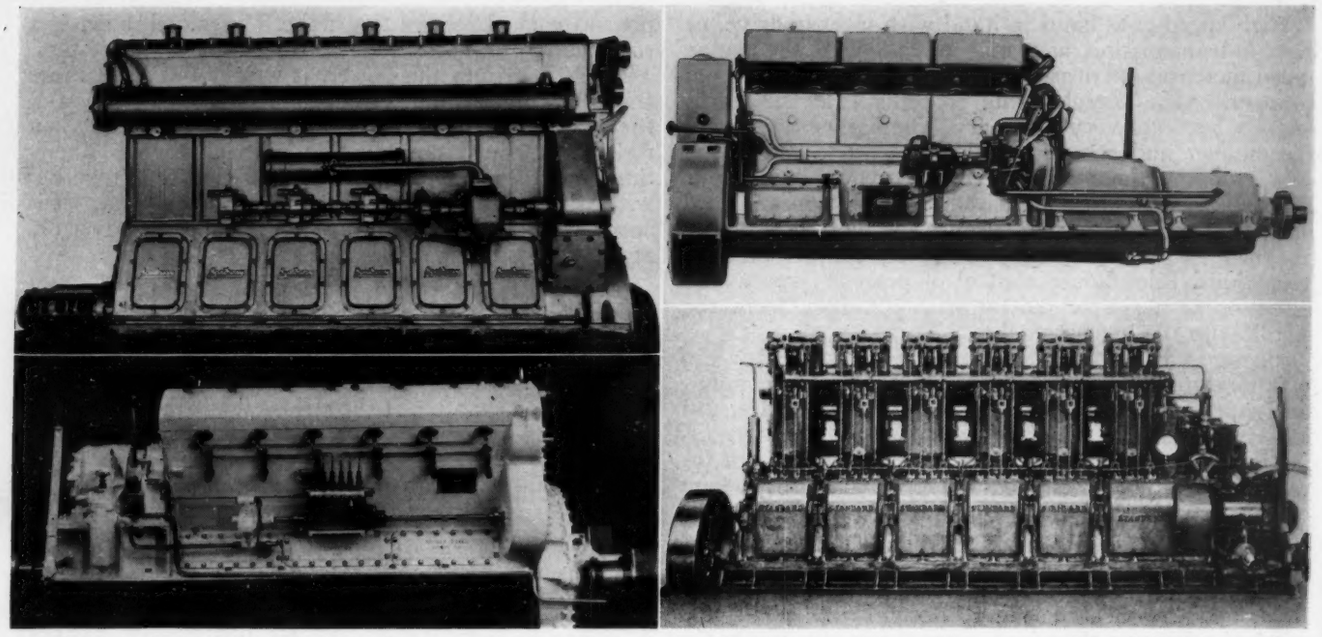
As the first American Diesel yacht was the *Idealia*, built 15 years ago, I shall first mention briefly the Nelseco engine with which she was powered, and show the progress since made. Her engine was a four-cylinder, four-cycle, model of 120 b.hp. at 350 r.p.m. In their catalog at that time the makers took pride in referring to it as "heavy duty" type. As will be noted from the illustration, it was a non-reversing engine with mechanical clutch. All the fixed parts, such as bedplate, crank-housing, door-plates, gear casing, and separately cast cylinders, were heavily built of cast iron. There were no valve push-rods, but unusually long rockers were mounted on the cylinders, and operated from an exposed camshaft set in brackets on the crank-housing. All piping was exposed, and nuts and studs stood out like sore thumbs. Just compare this old engine with the present yacht Diesel of this make. The model shown is a six-cylinder unit developing 400 b.hp. at 325 r.p.m. Though 3.4 times the power, it weighs but little more than the *Idealia's* motor. It has mechanical injection of fuel, and instead of separately cast cylinders there is a rigid water-box construction with inserted liners. Super-charging has been introduced, and this, together with aluminum alloy pistons, permits of 15 per cent speed increase and 20 per cent power increase over old models.

There are numerous yachts of high power now equipped with Cooper-Bessemer Diesels. The makers of this engine have made marked departures from their own earlier engines, indicating that their engineering staff is ever on the alert to keep pace with yachting times. As an example of the strides made in four years I shall quote the m.y. *Vidor*, a 171-footer of 14 knots' speed, completed in 1926, and compare her engines with those of one of the latest de luxe yachts, the *Hi-Esmaro*. The latter is 267 feet long and of 15½ knots speed.

	Vidor	*Hi-Esmaro*
Total Power (s.hp.) (Twin main engines)	1600	3000
Weight (lbs.)	101,000	149,000
Weight per s.hp. (lbs.)	126	99
Revs. per min.	250	400
No. cyls. per engine	6	8
Bore & stroke (ins.)	16 x 22	18 x 22

In general design and construction, these two engine models differ radically. The changes are so numerous that it is probable that none of the old patterns are used with the present design. This rapid development is one of the factors entering into the higher first cost — compared with steam — of the Diesel. The *Vidor's* engines were of the old, individually cast cylinder type without liners, and had gear drive to an overhead camshaft. They turned at only 250 r.p.m., whereas the *Hi-Esmaro's* operate at 400 r.p.m., and with a crankshaft 2¾ inches greater diameter, and with silent-chain drive for the camshaft. Instead of being plastered all over the engine, the fuel, lube oil, cooling water, fuel transfer, lube oil transfer, and bilge pumps are completely built in. Gone are the separate cylinders; in their place is the rigid water-box into which individual liners are pressed, giving more effective cooling. In the event of wear, a score or crack ever occurring, only the liner has to be replaced — a form of design I advocated repeatedly 15 years ago.

An ever-increasing number of sailing yachts are using Diesel engines for auxiliary power. Here is a new Alden-designed schooner recently launched which will be fitted with a 100 h.p. Standard Diesel.



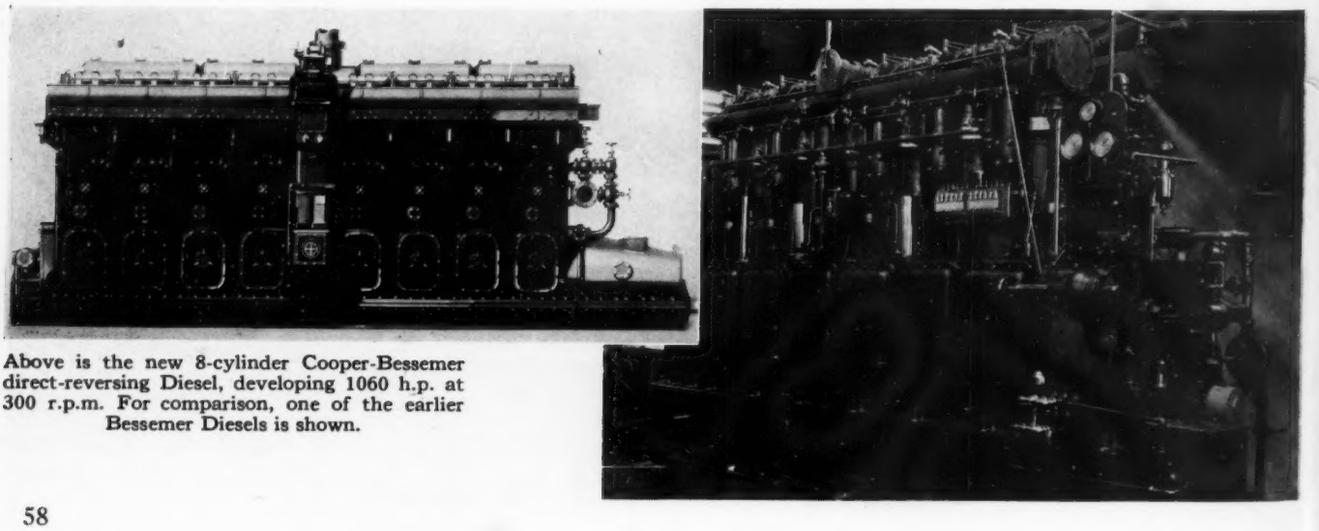
(Top, left) The new 300 h.p. 6-cylinder Speedway developed for yacht use. It weighs but 25 lbs. per horsepower. (Right) Modern gasoline engine practice is embodied in the latest Buda Diesel for yacht use. (Bottom, left) The new lightweight Treiber Diesel developing 300 h.p. at 1000 revolutions. With aluminum frames the weight is reduced to 4400 lbs. (Right) The Standard was one of the first American airless injection Diesels.

While Fairbanks-Morse engines have been installed principally in commercial vessels, yet they are to be found also in numerous yachts; and as the makers build nearly as many Diesels as the rest of the industry combined, some notation of their pleasure boat engine should be recorded here. The chief development is the change from the low-compression oil engine to the Diesel system. Several yacht installations have been made with a little six-cylinder engine which has quite a high speed, namely 800 r.p.m., developing 90 b.hp. Of the two-cycle type, crankcase compression is used to scavenge the combustion chambers. Reversing is by mechanical gear and friction clutch. The bore is 6 inches by 6½ inches stroke, and the engine weighs 5750 lbs. with gear. In larger, heavier duty engines pump scavenging has been adopted.

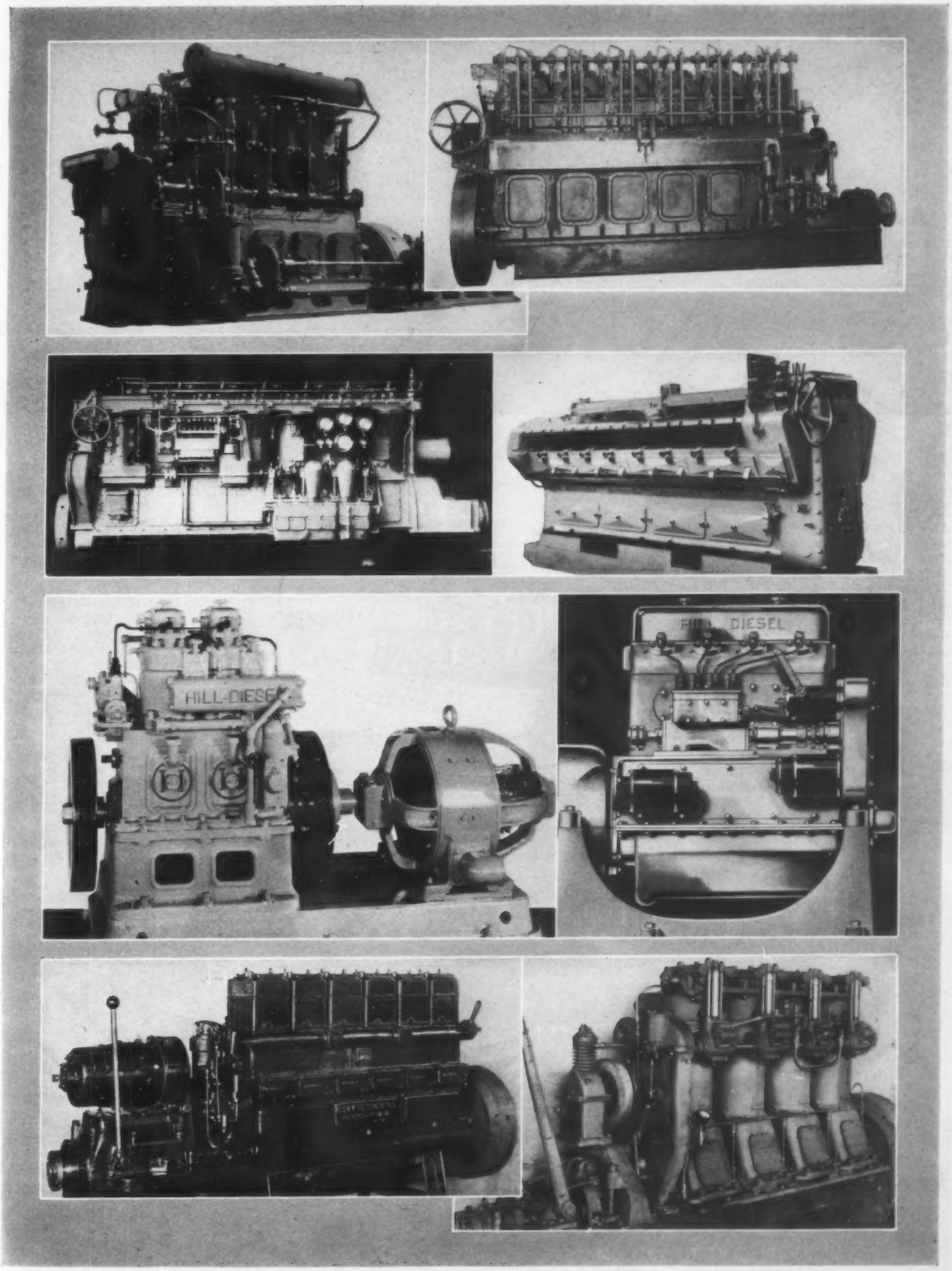
Another example of a Diesel for smaller yachts and cruisers, but which has been quite extensively installed, is the Hill. When introduced in 1924 the Hill engine was not a true Diesel, although it was of the high-compression type and burned "heavy oil." In the cylinder head there was a small pre-combustion cup in which ignition was commenced by heat of air compression, fuel feed to this cup being by gravity and drawn in by suction on the intake stroke. Cylinder lubrication was by sight-feed droppers, while bearings were lubricated by splash. Fuel was limited to 28 degrees Beaumé.

Today, the Hill engine has the pump injection turbulence chamber system, representing a great advancement over the earlier model. The crankshaft for almost the same bore is increased from $2\frac{7}{16}$ inches to 3 inches, and runs in babbitt-lined bronze shells. Lubrication now is by means of a dry-pump pressure system to all parts, employing such refinements as metallic filters to maintain the oil in the best possible condition. Provided the fuel is warmed to allow it to flow through the fuel tubing and filter, oils as low as 20 degrees Beaumé can be used. Weights in general have been reduced by taking full advantage of the most outstanding developments of metallurgical skill. One of the illustrations shows the very latest Hill Diesel, which operates at the

(*Continued on page 112*)

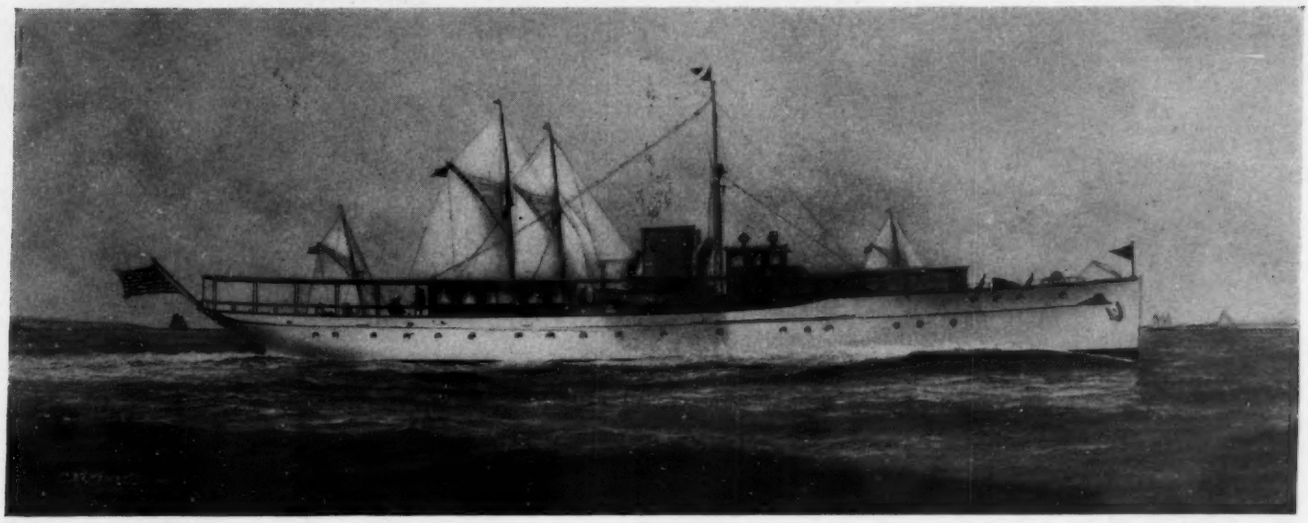


Above is the new 8-cylinder Cooper-Bessemer direct-reversing Diesel, developing 1060 h.p. at 300 r.p.m. For comparison, one of the earlier Bessemer Diesels is shown.



The tremendous advance in design and reduction in weight in Diesel construction is strikingly shown in these pictures of the earlier and modern Diesel engines. (Top row) Nelseco, one of the first American Diesels used in a yacht. (Second row) Winton, showing at right, new 16-cylinder Vee-type motor. Two Hill-Diesels, in the smaller sizes, are shown, and (bottom) Cummins, old and new. In all except the bottom row the old model is at the left.

The Trend in Diesel Yachts of Moderate Size



Above, *Elda*, 130-footer launched recently for Arthur V. Davis by the Defoe Boat & Motor Works, Bay City, Michigan. Designed by Cox & Stevens, she is distinctly modern in every particular and extremely pleasing to the eye. Equipped with two of the V-type 16-cylinder Winton Diesels, she will do 20 m.p.h.

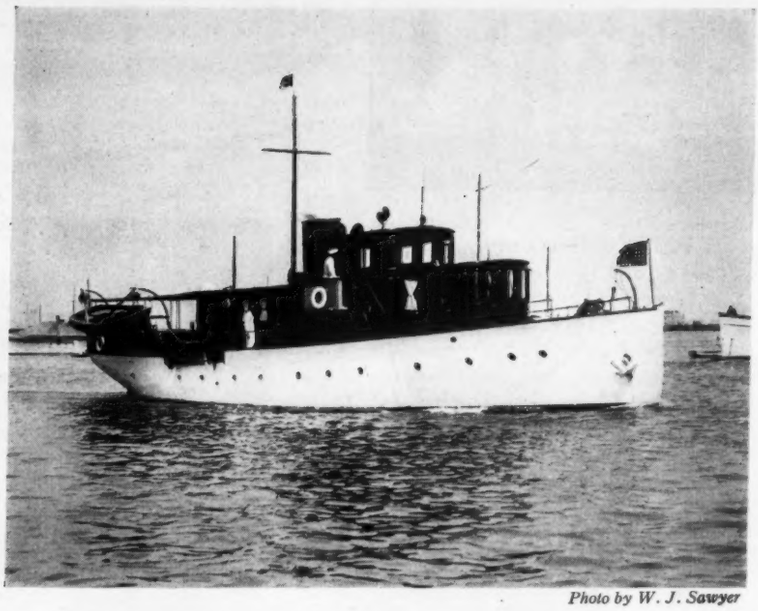


Photo by W. J. Sawyer

A smaller Diesel yacht is the *Acushla Machree*, a West Coast boat owned by Joseph F. Logell. Designed by Edson B. Schock, she is only 80 feet in length, power being supplied by two 100 h.p. Union Diesel motors. She was built by the Harbor Boat Building Company.

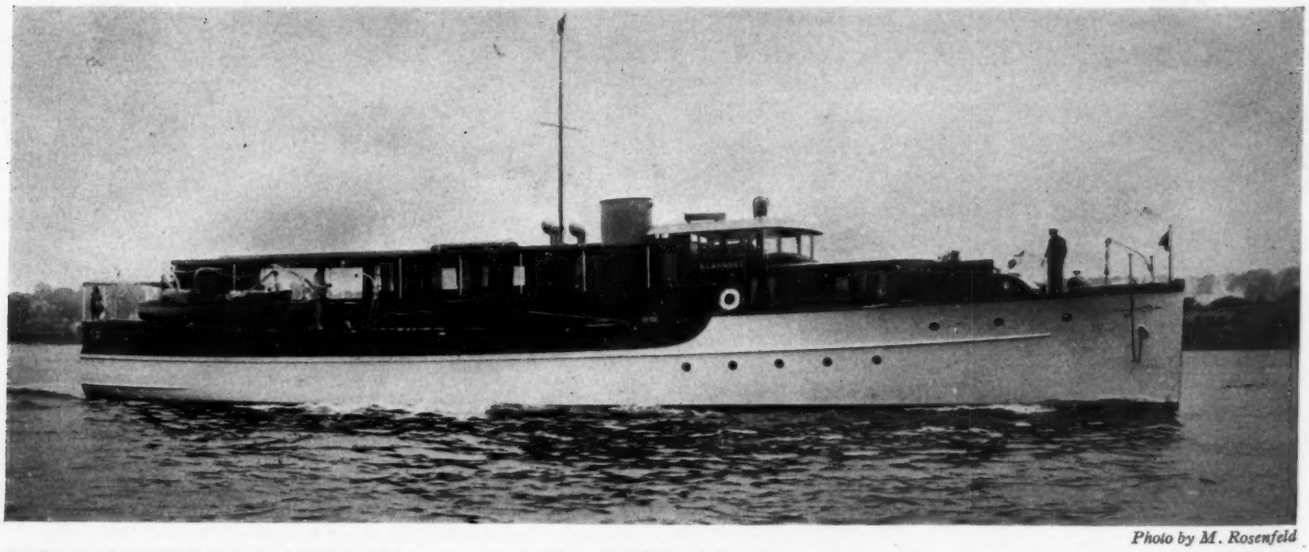
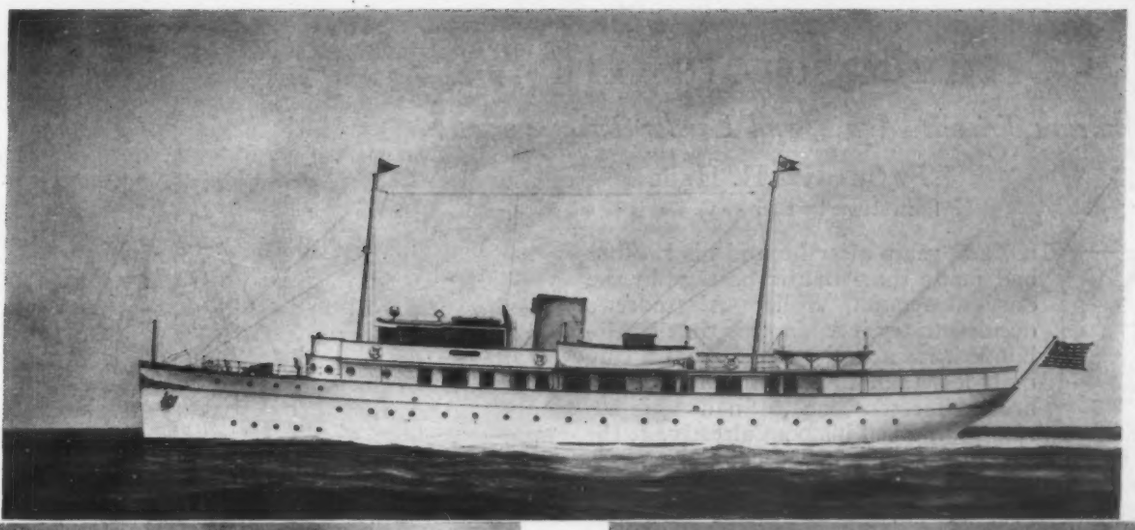
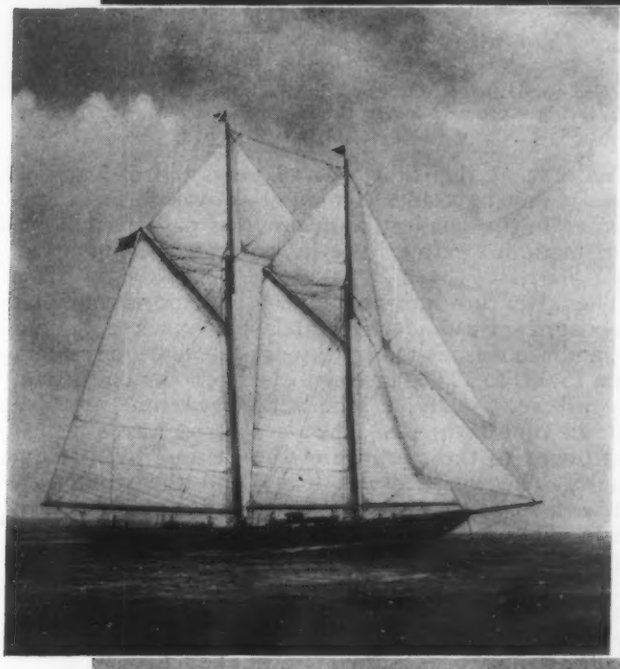
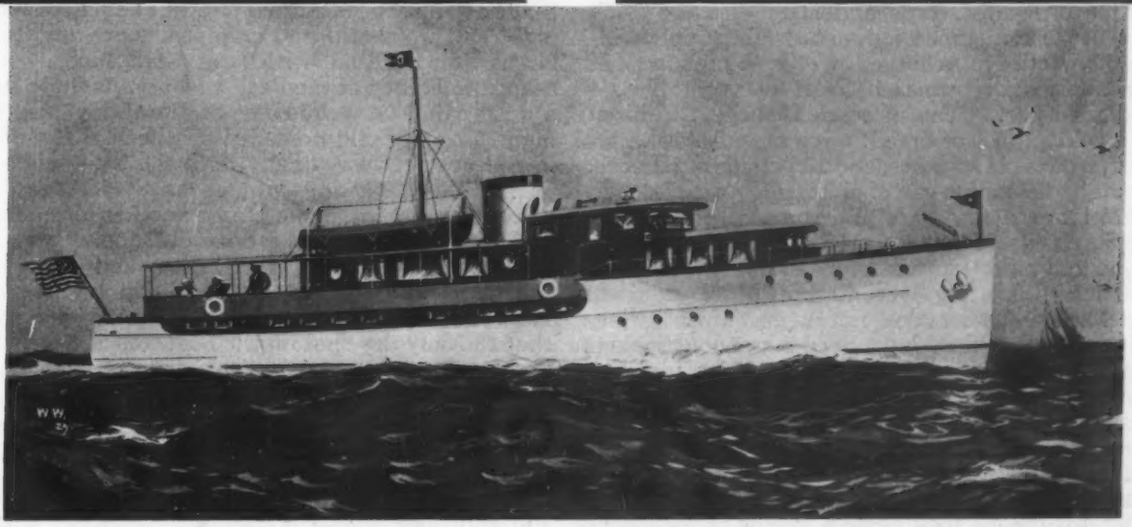


Photo by M. Rosenfeld

Klahanee is a 106-footer, designed by Tams, Inc., for Lucius M. Wainwright. She was built by the Consolidated Shipbuilding Corporation, and made 18.11 m.p.h. on her trials with two of the new Speedway Diesel engines of 300 h.p. each, turning at 700 r.p.m., and weighing but 25 pounds per horsepower.







Above is the new 93-foot cruiser *Mettamar*, designed and built for R. E. Olds by the New York Yacht, Launch and Engine Company. She is powered with two modern Hill-Diesel motors of 150 h.p. each. At top of page is seen the new steel cruiser *Helene*, owned by Charles E. Sorensen, of Detroit. She is 143 feet in length and was designed by H. J. Gielow, Inc., and built by the Bath Iron Works. Two 400 h.p. Cooper-Bessemer Diesels will drive her at 14 m.p.h. In the center are two auxiliaries, both Diesel-powered. At left is the *Etak*, a 134-footer designed by Cox & Stevens for Walter G. Ladd, which does 8½ knots under power with a single Winton engine; while at the right is the three-masted staysail-rigged auxiliary *Black Douglas*, owned by Robert C. Roebling, of Trenton, from designs by H. J. Gielow, Inc. A Cooper-Bessemer engine furnishes power.

Adventurers All

Andrews Tries It Again, and Lawlor Takes a Hand

By CHARLES H. HALL

Illustrations by Charles G. Davis

A DOZEN years after he and his brother had made the Atlantic passage in the dory *Centennial*, William A. Andrews decided to try it again, this time single-handed. He selected for his boat a tiny craft less than 13 feet long and looked around for someone to finance his adventure. Though he had named his boat already, at the request of a theatrical man he renamed her *Dark Secret*, the title of a show that was running at the time. He also made arrangements with the *New York World* to make the trip under the auspices of that paper and to send them bulletins by vessels spoken on the way.

The boat was built by Higgins and Gifford, of Boston, and was the smallest craft that had yet dared the Atlantic, being only 12 feet 9 inches long over all, 5 feet beam, and 2 feet deep. Her mast was but 8 feet above the deck and her lateen sail had a 17-foot yard and was 15 feet on the foot. The hull was planked with one-half-inch cedar and had a keel of a heavy timber, hollowed out to make a stowage space. Here was placed the supply of fresh water of which 40 gallons were carried. On the bottom of the keel was an iron casting weighing 200 pounds. This could be dropped by slacking up a screw. She was decked over fore and aft and there were three watertight — the *World* calls them airtight — bulkheads forward. Amidships was a small trunk with a supposedly tight slide, and there was a little well aft. From the pictures of her she seems to have been a double-ender, but of this we are not certain.

Andrews, with a well developed commercial instinct, apparently made arrangements with the agents of a number of well advertised articles, for he mentions his use of them by name at every opportunity. He carried a supply of rubber envelopes in which to send back his reports to the *World* and he had a life ring of cork, with a Mason jar for his last words, and a flag lettered: "Pick This Up," to use in case of disaster. His supplies included 100 bottles of charged water, 50 pounds of biscuits, 15 cans of beans, 10 cans of vegetables, 4 cans of corned beef, 1 can of condensed milk, a dozen lemons, a cake, a loaf of bread, a jug of molasses, a jar of vinegar, 2 boxes of sardines, and 10 pounds of tobacco. There was also a 2-gallon can of oil to use in bad weather, an alcohol lamp, a few tools and some other personal belongings. To ensure a fitting celebration of the Fourth of July, he had half a dozen bottles of champagne and, from entries in the log, several bottles of Bourbon whiskey. The list of stores does not suggest much variety in his diet and he seems to have lived largely on crackers and condensed milk, without anything hot for days together.

The ship's nautical outfit included a chart of the North Atlantic, a quadrant, chronometer watch, two compasses, parallel rule, two pairs of dividers, nautical almanac, and an epitome. As whales had scared him on his earlier voyage, he took along a supply of torpedoes, which "made a noise like a six-pounder," to frighten them away when they came too close. He wore "a perfectly watertight suit of his own design," but carried a brand new suit of shoregoing clothes, sealed up in a tin case, for wear after landing.

The *Sea Serpent*, 15 feet of boat in which "Si" Lawlor crossed in 1891, racing another 15-footer, the *Mermaid*. Lawlor was 45 days making the passage.

Andrews at this time was 42 years old and was a piano maker by trade. His ambition was to make the crossing in the smallest boat, previous passages having been made in craft a little larger than the ill-starred *Dark Secret*.

The adventure was well advertised, Andrews having his boat near Boston for several days previous to shoving off, and she was visited by throngs of people, anywhere from 15,000 to 20,000 having looked her over on the last day ashore. Finally, at the announced time, at 6:00 P.M. on June 17th, 1888, the *Dark Secret* was launched and towed to the entrance of the channel by a steam launch. The weather was foggy and the wind non-existent, so he paddled down to Fort Warren and then made sail and ran on to Nantasket where he anchored for the night. Like many a larger craft, the little boat was all in a raffle below, her stores and gear were only about half stowed and she was out of trim, being badly by the head. He managed to shift things about a bit so that he had room to stretch out, but he passed a restless night and woke stiff and cramped. Next day he got as far as Stony Beach, with light head winds, and went ashore and dined at the Pacific House. As there was then a dead calm, he went home to Cambridgeport for the night. Fog and rain prevailed for the next few days and he did not get away finally until the 23rd, when he left at 7:35 A.M., passing Minot's at 8:45. What with a heavy thunder squall, he passed another miserable night and discovered that the boat did not lie well to her drogue. On the 25th he heard the sound of the horn on the tip of Cape Cod and then slowly made his way to sea. He was disappointed in the boat's behavior for he says that the only dry spot on the boat was at her masthead. On the 29th he was back within sight of Highland Light once more and next day was only 65 miles east of Boston Light. Several times he was spoken by the pilot boat *Hesper*. July 1st was marked by bad weather during which he lost his drogue; probably the line chafed through though he does not say how it happened. On the third, he found himself in discolored water and found that he had blundered down to Nantucket Shoals, a fine place to fool around in a little boat!

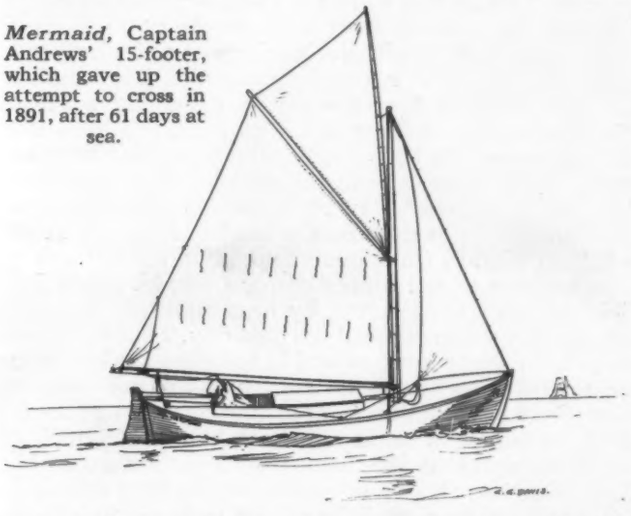
By this time he was getting disgusted with the voyage and complains of being constantly wet, with his legs stiff and his hands cracked. He was so cramped that he

could not sit up straight. The boat was so lively that she was extremely uncomfortable and the mast step was working loose. On the eighth he met the schooner *Laura Kune* of Gloucester and her skipper persuaded Andrews to come aboard and have a hot meal, the first proper food that had passed his lips since starting from Boston. This cheered him and he renewed the fight against the elements, meeting heavy winds for the next few days. Some of his food had begun to spoil and the boat was leaking.

Smiling skies and smooth water on July 15th gave the opportunity for a bath, his first during the voyage, and Andrews found that he hardly knew himself. He was as thin as a rail and black and blue all over. Two weeks later he remarks that the boat had been on her beam ends several times and that she was not like the old *Nautilus*, "She rushes through waves that the *Nautilus* used to ride."

And so it went, the boat leaking so badly that he had to "pump ceaselessly and sleep with one ear open," and his endurance was being sorely tried by his diet of oyster crackers and cookies. During the early part of the voyage he had spoken a number of vessels and had been sighted by others and had sent in his flowery bulletins with fair frequency. Often a vessel would sight the *Dark Secret* and head for her, sheering off when Andrews was discovered in the cockpit. Their skippers would go out of their way to rescue a crippled boat but had little time for one under control.

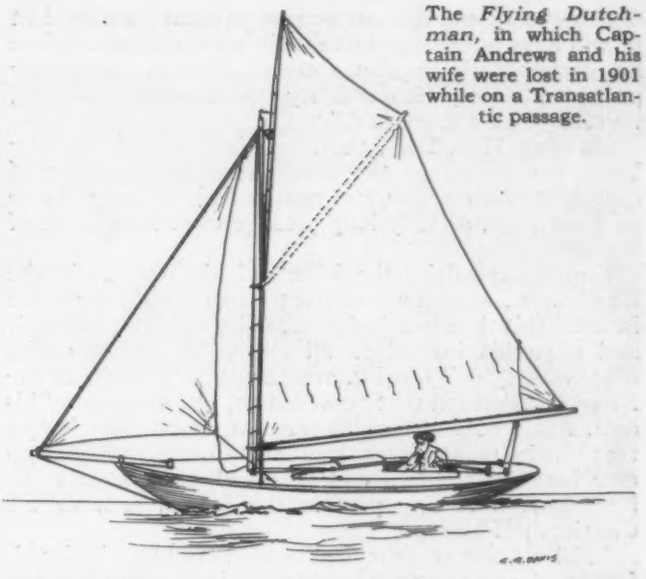
At last, on August 19th, the bark *Nor* came alongside and Captain Bjonness persuaded Andrews to give up the voyage. He had been out 60 days and was then in 46:18 N., 39:50 W., about 50 miles beyond the halfway



Mermaid, Captain Andrews' 15-footer, which gave up the attempt to cross in 1891, after 61 days at sea.

mark. Andrews tells of quite a conversation with the bark's master and that he was ready to continue if he could get a supply of food and water, but other contemporary accounts state that Andrews was almost exhausted. At any rate, the *Dark Secret* was hoisted out and lashed on the bark's deck and she continued her voyage for New York, arriving there on September 21st. Andrews himself admits that his food was about gone, that the boat had developed numerous defects, that his outfit was worn out and that there were barnacles an inch long on the *Dark Secret's* bottom. This was the result of the brilliant idea of putting a coat of varnish on top of the copper paint.

In the same year, 1888, according to an account in one of the British yachting magazines, three homesick Englishmen at Ponchestroom, South Africa, built a high



The ***Flying Dutchman,*** in which Captain Andrews and his wife were lost in 1901 while on a Transatlantic passage.

sided double-ender 24 feet long and dragged her nearly 300 miles to the coast behind an ox team. They sailed her from Durban to England, taking nearly six months to do it. So far we have discovered no other reference to this voyage. She was named, it is said, *For England, Home and Beauty!* In that same year Captain Joshua Slocum brought his family home from South America, after the loss of his bark *Aquidneck*, in the little *Liberdade*, more about which anon.

Dennis J. Lawlor was a famous designer and builder of craft of sorts with a yard near Boston. The clipper hermaphrodite brig *News Boy* started him in large vessels, turning him from boatbuilding. This vessel made the coast near Halifax 15 days out from the Azores, against westerly winds most of the way. He was a pioneer, having built the first straight-stemmed pilot boat and being responsible for other innovations. He had to his credit the designs of nearly 500 vessels and had turned out in his yard over 150 merchant vessels, including ships, barks, brigs, and schooners of two, three and four masts. He designed and built the yacht *Gitana*, 15 pilot boats, and many steam yachts and tugs. Burgess used to consult him and the two were fast friends. Lawlor was a little man with bristling side whiskers and a most positive manner. He had two sons, one of whom, Josiah W., followed the sea and had a fairly adventurous career.

In 1889, one Norton proposed a system of water ballast for boats and made all sorts of ridiculous claims. A well known naval architect was at that time the yachting editor of *Forest and Stream* and he took delight in exposing Norton's claims. In 1889 Norton built the 30-footer *Neversink* and decided to send her abroad to be exhibited at the Paris Exposition. He looked around for a skipper and picked on "Si" Lawlor. With two others, Hans Hansen and Edward S. McKinney, son of the treasurer of the Norton Co., Lawlor set out for the other side.

The *Neversink* was a keel boat 36 feet long over all, 30 feet on the water line, 12 feet beam and 2 feet 6 inches draft. She had a plumb stem, a short stern and was rigged as a yawl. Much of her interior was given up to her water ballast arrangements but she was said to carry stores for 50 days. Commenting on the voyage, *Forest and Stream* says: "Captain Lawlor, though only 35 years old, has followed the sea for 23 years and is recognized as an expert and skilful sailor. He is the hero

of shipwrecks and narrow escapes without number, but he will have added considerable to his experience before he reaches Paris in such a craft." Norton apparently promised "Complete immunity from capsize or sinking, together with great speed."

On May 11th, 1889, the *Neversink* sailed from New York, going through the Sound with the intention of calling at Boston. She was reported as reaching Havre on June 28th, a fairly long passage even for a boat of her size.

Undiscouraged by the failure of his attempt in the *Dark Secret*, Andrews resolved to try the Atlantic again in 1891, this time in a 15-footer, so he built the *Mermaid* and gave his intentions all the publicity he could. Meanwhile, "Si" Lawlor, even after his crossing in the *Neversink*, decided that he would go, too, in a boat of his own. Andrews was greatly put out about this, feeling that Lawlor was trying to steal his thunder, and finally a race between the two was arranged, the course to be from Boston to any port in the British Isles or the Continent of Europe.

Lawlor's boat was the *Sea Serpent*, built for him by his father. She was 14 feet 11½ inches long over all, 5 feet beam and 2 feet deep, with 2 feet draft. The *Mermaid* was of the same dimensions. The *Sea Serpent* was a double-ender and the *Mermaid* was of the deep, round-sided dory type. The *Mermaid* had a jib and a sort of batswing mainsail and, according to one account, was fitted with a centerboard. The *Sea Serpent* had a long bowsprit and a spritsail, the after upper half being of lighter canvas and arranged to be unlaced. Both of the tiny cockleshells had complete outfits for the voyage. Lawlor chose a northerly course while Andrews declared that he intended to stand to the southward.

The start was set for Bunker Hill Day, June 17th, but the weather was so bad, with a high easterly blowing and a big sea running, that it would have been foolish to shove off. They finally got away at 6:20 p.m. on the 21st, taking their departure from the long pier in Revere. One account says that the men were reported as being "in poor condition for such a trip." Now just what does that mean? A despatch to the *World*, with a Boston date line, declares that Lawlor put into Marblehead the next day and that Andrews returned to Revere. They wanted clear weather for the run to the Grand Banks and were fearful of being run down.

The racers were spoken several times on the way across and the *Sea Serpent* arrived at Coverack, near the Lizard, on August 5th, 45 days from Boston. She was nearly capsized one night while Lawlor was asleep, a huge shark coming up under one bilge. Andrews had declared that he expected to make the land in less than 50 days — indeed, he was willing to bet on it — but he was last spoken on July 27th when in 45 N., 55 W. Finally, on August 22nd, the *Mermaid* was picked up by the steamer *Ebruz* and carried on to Antwerp. She had then some 600 miles of easting still to make. Four days before being picked up, while lying to a drogue in a gale, the *Mermaid* had been capsized and was righted again with great difficulty. Andrews had a lifeline fast to him and managed to crawl up on the boat's bottom. When overhauled by the steamer he was lying exhausted on the floor of the cockpit. He vowed, it was reported, "never to undertake such a venture again."

One thing about this race was that it was not undertaken to advertise some newspaper but was the result of an honest rivalry between the two contestants. No particular end was served, it merely proved again that an iron man, with the requisite skill and experience, can take a boat through almost anything. It surely took men of tremendous endurance to go through 45 or 50 days of wet and cold, cooped up in a tiny boat, tossed about every second of the day and night, and living on cold grub most of the time.

In 1890 Norton put his theories to the test again when he and his wife, with his niece and a crew of seven men, put to sea in the steamer *F. L. Norton*, a 50-footer built according to his ideas. She sailed from New York in the middle of November, bound for the other side, and was never heard from again.

Life ashore apparently made Andrews forget his trials at sea and he once more sought the limelight in 1892. He built himself a queer little canvas-covered contraption 14 feet 6 inches long, 5 feet 5 inches beam, and 3 feet deep. Her sides were stiffened with cedar slats and she had a canvas hinge along the keel and another along the chine on each side. When her deck was removed she could be folded up into small compass. She was shovel-nosed and had a stumpy little bowsprit. She had a batswing mainsail like that of *Mermaid*, mainsail and topsail being in one piece of duck, and a jib. Spinnaker and balloon jib were also carried. Her mast was only 8 feet long and 4 inches in diameter, and her sail area was about 15 square yards.

She had 350 pounds of lead on her keel and her water helped to ballast her. Aft was a cockpit 6 feet long and a couple of feet wide, with a cover that could be drawn over it when wanted. When the weather got bad, the skipper crawled below and pulled the cover over the cockpit. It was theoretically airtight but leaked quite a bit of water in service. All provisions were in cans or bottles and in his book, *Columbus Outdone*, the bold navigator takes pains to make frequent mention of all the advertised articles. This seemed to be the fashion then. Remember Thomas Stevens and his trip around the world on a well advertised make of bicycle, lugging out a similarly well advertised make of revolver on every plausible occasion? So Andrews looked around for an angel and wrote to the advertising manager of Enoch Morgan's Sons that he had named his boat *Sapolio* and was going to sail in her to Palos, Spain, to attend the Columbus celebration. The concern backed him, published his book describing the voyage, and exhibited the boat in its space at the Chicago World's Columbian Exposition in 1893.

Scheduled to sail from Atlantic City, N. J., on July 1st, the start was delayed by head wind and rain and she did not shove off until the next day. Then fair winds took her rapidly offshore and in ten days she had made some 700 miles on her course. By that time Andrews had discovered that his compass was a poor one (he calls it a "whirligig") while the boat had begun to leak. Sunburn bothered him for a few days, preventing him from sleeping, though he seems to have kept drier than on previous passages. When hove to in a gale on July 29th, the drogue line chafed through and he lost his drogue. On August 10th his gooseneck broke during a lively thunder squall and about the same time the beans and apples began to give out. This time he seems to have varied his cracker diet.

On August 20th he sighted Flores but did not land, though he tried to communicate with one of the coast guards, only to be threatened with a rifle. Not knowing the language, and finding his attempt at sign language misunderstood, he filled away and went on, landing at Angro do Heroismo, Terceira, on the 26th.

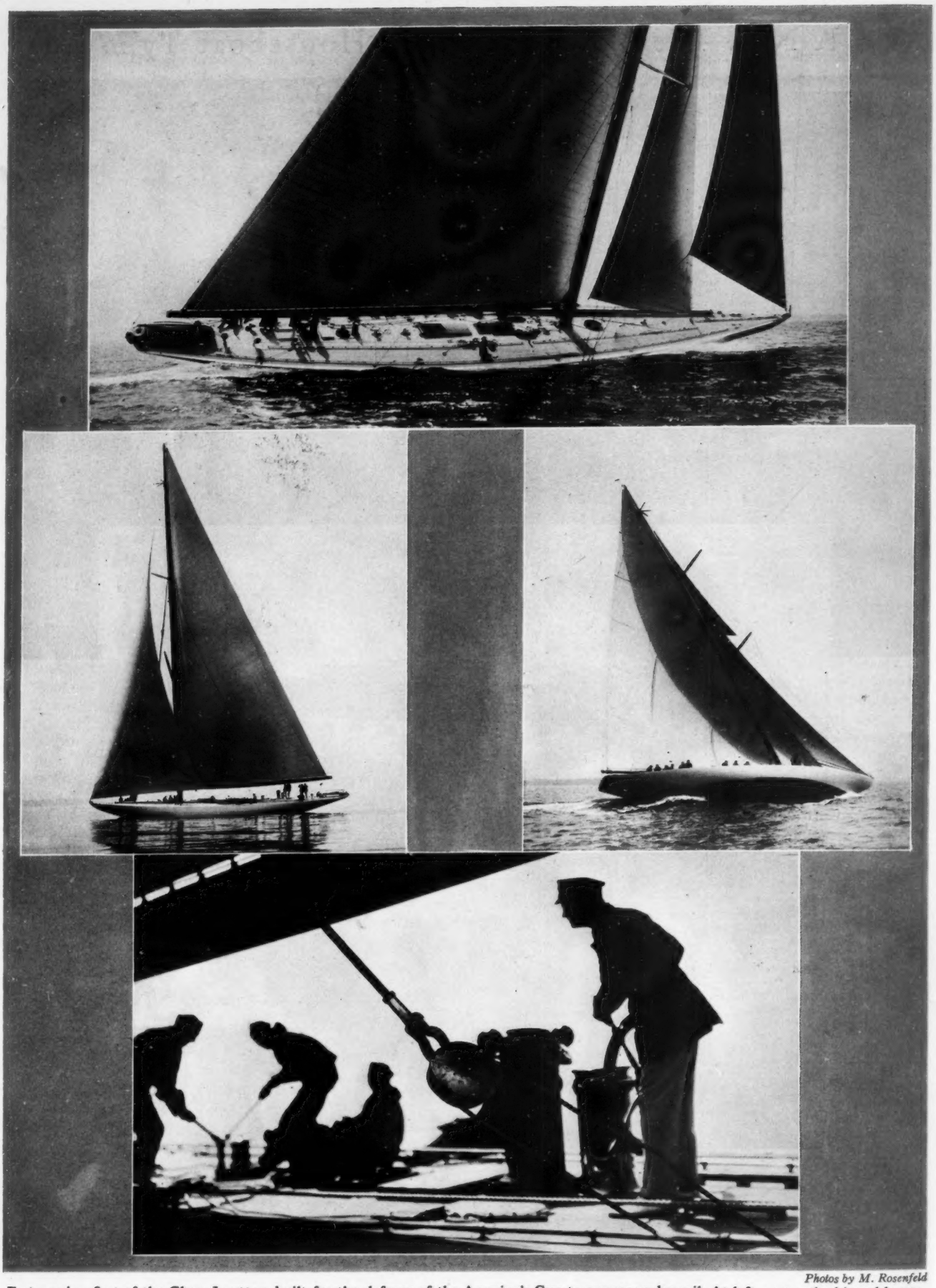
There some necessary repairs were made and on the 29th he made sail once more and headed for the Spanish coast, reaching Fuzetta on September 24th and Palos on the 27th. On this leg of the voyage he had a wet and

(*Continued on page 116*)

A New Diesel Yacht of the Houseboat Type

Photos by M. Rosenfeld

That many types of yachts are now being powered with Diesel engines is indicated by this new 106-footer, *Viator*, owned by Maitland Alexander, of Islesboro, Maine. Of the houseboat type, with all the room and comfort that a boat of this type permits, *Viator* was designed and built by the Mathis Shipbuilding Company, of Camden, N. J. She is powered with two 6-cylinder Winton Diesel engines.



Photos by M. Rosenfeld

Enterprise, first of the Class J cutters built for the defence of the America's Cup to appear under sail. At left center the hinged lower spreader may be seen, cockbilled to prevent interference with Genoa jib. At bottom, H. S. Vanderbilt, syndicate head, at the wheel.

As the first of the fleet of 127 outboards hit the line with the gun at the start of the Albany-New York Marathon, 6:00 a.m.. April 26th.

The 1930 Albany-New York Marathon

Outboards and Inboards Make New Records — Some Interesting Sidelights on the Long Grind

By THURBER CUSHING

A JOYFUL jaunt of 132¼ miles down the Hudson River opened the 1930 motor boat racing season and opened it wide. It broke a lot of records but no hearts; it gave a treat to speed fans, technicians and the general public; it proved many things, and it left so many others unproved that the rest of the season is likely to be spent in settling the speed questions opened by the Albany-New York marathon. Probably no contest of similar length and importance ever left everybody so happy — losers as well as winners — nor so many interesting possibilities ahead.

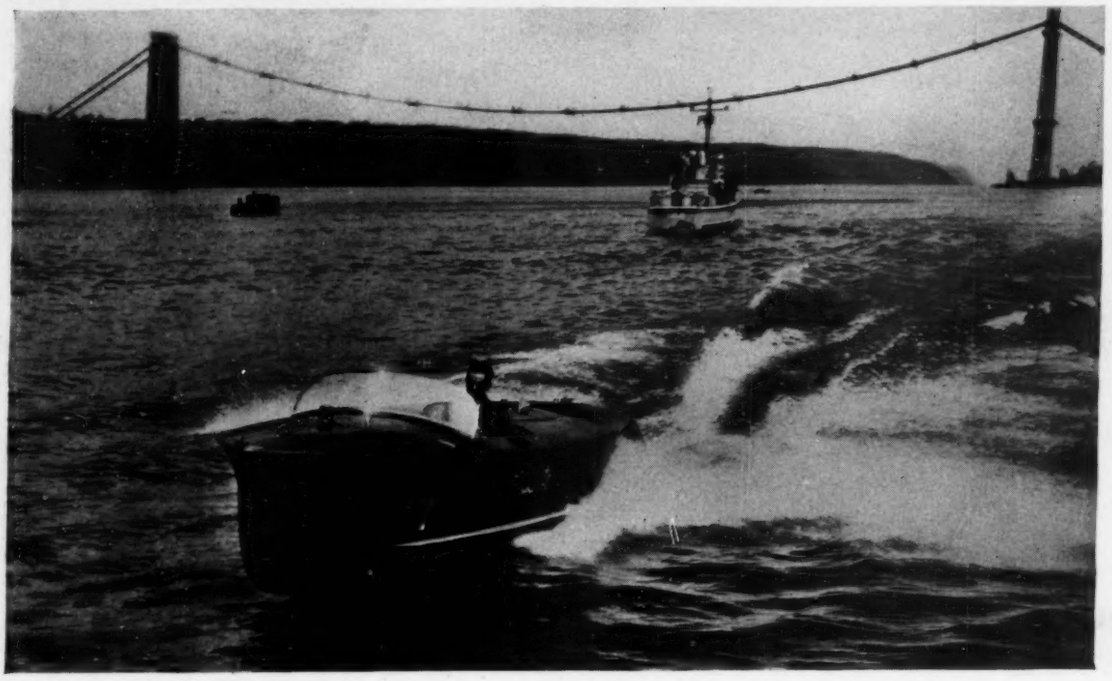
For the non-racing user of motor boats, the first test of the 1930 products proved just about everything that could be desired. The year's outboard motors are faster and more reliable than ever before, and the new small inboard runabouts are a dependable and speedy as well as delightful addition to the world's transportation equipment. It was the third annual race of its kind for the outboards, but the first time the light inboards, new to the market this year, had been seen in action.

The race was the first act of a tense drama of economics and engineering enterprise, as well as a contest of men and mechanisms against each other and the elements. One large manufacturer announced only a short time before the race the biggest and most powerful two-cycle outboard motors ever built. In the top speed class the marathon was a race for glory and gold between the newly-born Class F motors and the newly improved Class D. (Outboard motors are classed according to the size of the cylinders — Class B has a top limit of 20 cubic inches; C has 30; D, 40; E, 50; F, 60. Thus F is half again as big as D.)

Sixteen "F" motors and 52 "D's" checked in at Albany at dawn April 26th, ready for the start, out of a total of 127 outboards. An "F" took the lead with the gun and held it. At Poughkeepsie, 69 miles down the river where an official check was made of the racers, that same "F" was two minutes ahead. Six of the first seven racers at the half-way mark were "F's," with a lone "D" in third place.

The same "F" appeared within sight of those at the finish line at the Colonial Yacht Club, New York, long before another boat was sighted. Then fate, after having encouraged the latest development in outboarding for a good 130 miles, turned away. A glove floating in the river caught in the water intake of the motor, the

Flash, driven by J. E. Wilkinson, finishing the long drive in record-breaking time, thereby winning the Haynes-Griffin Trophy. She averaged 38.71 m.p.h.



In the Junior Inboard Runabout Class, run this year for the first time, the winner turned up in this little Dee-Wite, driven by Jack Prosser.

necessary cooling fluid was shut off and the motor heated up and stopped. A motor of Class D that was in seventeenth place at Poughkeepsie came along and won the race. A Class C job that was eighth at Poughkeepsie came in second. None of the first seven past Poughkeepsie finished at all. The lone "F" that finished came in fourteenth, and was beaten by a Class B job, just one-third as big.

The results by classes explain why almost everybody was happy; why the race was full of thrills and why it really settled nothing except the actual ownership of the particular prizes — Class F went fastest; Class D won the race; Class C finished three out of the first four, and Class B had by far the greatest percentage of its starters finish. Only Classes E and G, which did not have enough starters to provide a fair average of performance, failed to find considerable cause for jubilation.

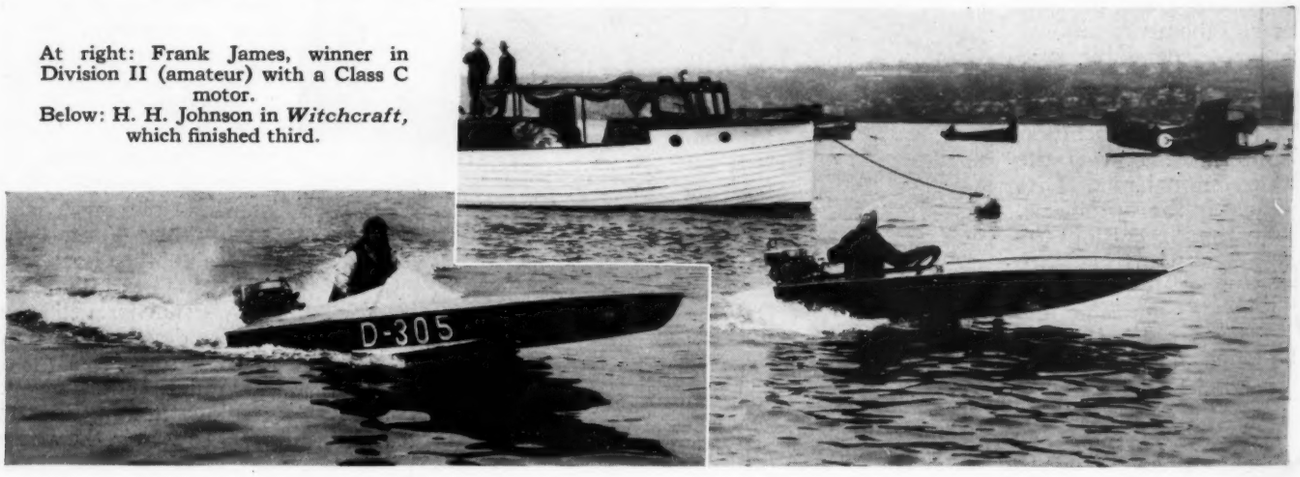
If you think the Class F fellows are downhearted because they lost the race, just go and ask them. They'll race you for anything from a smile to a million dollars, over any distance — but they may make some stipulations as to a course without floating gloves, submerged logs and treacherous shoals, for these apparently were the marine hazards which scuttled the prize hopes of Class F as well as of many of the other non-finishers.

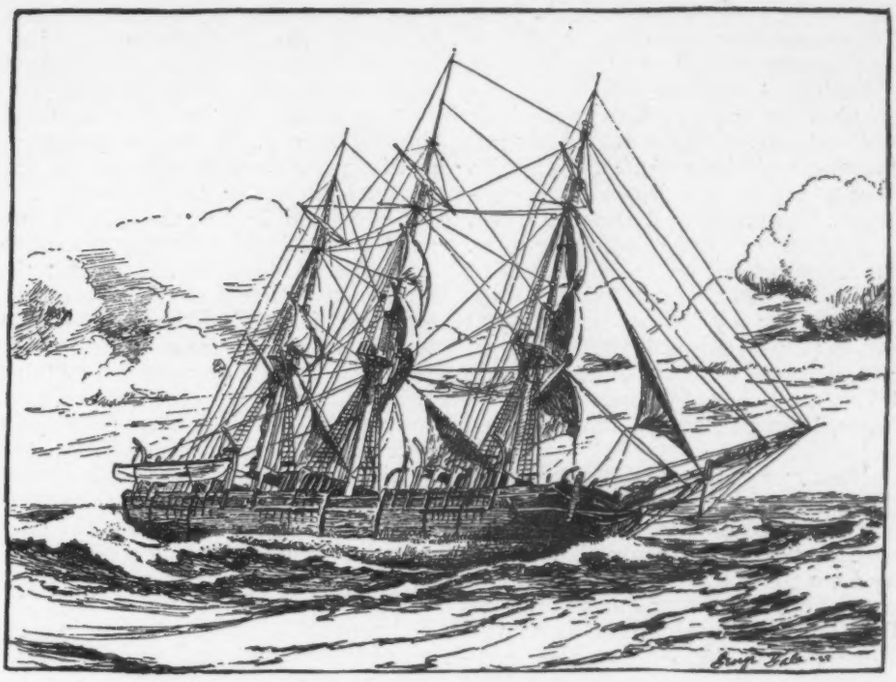
Fifty-five per cent of the outboards that checked in at the start completed the first 69 miles of the race; last year this percentage was 40. Thirty-one per cent finished the race, exactly the same ratio as last year. Marine hazards accounted for a large but undetermined portion of the non-finishers (and such hazards include the bad luck of invisible driftwood and the bad navigating evidenced by running aground and such), and for the rest must be blamed the "temperament" which all motors acquire when they are asked to sacrifice their normal reliability for the absolute maximum of speed.

A two-cycle motor is lubricated by oil mixed with the gasoline. At racing speed abnormally high temperatures are generated, and there must be an extra percentage of oil to allow for the extra burning-up due to the added heat. But while starting and while slowed down for any cause during the race this extra heat is absent, the surplus oil is not burned up and it is apt to foul the spark plugs. This is one of several reasons why outboard motors in a race are "temperamental" to a degree unknown in non-racing service. Another hazard in this early-season contest is the low temperature, which may cause a small portion of the extra oil to congeal before it goes through the carburetor's needle valve, and thus rob the motor of the final bit of lubrication needed to survive such a long grind at ultimate speed.

(*Continued on page 138*)

At right: Frank James, winner in Division II (amateur) with a Class C motor.
Below: H. H. Johnson in *Witchcraft*, which finished third.





It was the whaleship and her crew that wrote "New Bedford's name in the Book of Fame."
From a drawing by George Gale.

THERE'S a tear in my eye, for the men gone by,
And their thrilling anecdote,
Full of the spirit, did you ever hear it?
"A dead whale or a stoven boat";

With a lance for a pen, and "thick blood" for ink,
Those were the men who wrote,
New Bedford's name in the Book of Fame,
"A dead whale or a stoven boat";

Now that slogan's known, and it's all her own,
Wherever her ships did float —
It's their autograph, on her Coat of Arms,
"A dead whale or a stoven boat";

There's a sight for all, by her old City Hall,
To put a lump in your throat,
Where the statue stands, harpoon in hands,
"A dead whale or a stoven boat."

THEODORE P. CLEVELAND

Grey Treasure of the Sea

A Story of the Old Whaler "Splendid," Known to Fame as the "Cachalot"

By CAPT. JAMES A. M. EARLE

(As told to George M. Sheahan, M.D.)

THE little yawl *Two Sisters* was lying quietly at anchor in Nantucket Harbor, the turning point of a cruise along the Massachusetts coast, and we who had voyaged in her to that "seagirt isle" beloved of the old Quaker poet were reading and talking away a sunny summer afternoon. We had spent the morning ashore exploring the island and had been well repaid for our long voyage by the countless interesting scenes which Nantucket offers to the pilgrim.

The glorious island sunlight bathed us in its life-giving rays, the bright hued sails of the Rainbow fleet sped over the water fanned by the steady breeze with which it seems Nantucket is blessed no matter whence the wind blows: the bows made a cheerful purling noise and the boys and girls (who were sailing them) were enjoying life to the full. It made me think of Rahiroa far away in the Paumotous where the youngsters are out on the lagoon as soon as they can hold a paddle. Their boats differ from those you see at Nantucket, though, being dugout canoes about the size and shape of chopping trays, but the spirit is just the same — they seem to treat the ocean like a trusty playfellow. The Lisbon bell boomed out the hours over the water as the afternoon wore on; a "Portuguese Man of War" winged by with purple sail; the lapstreak tender astern talked with the ripples and the old sperm whale weathervane on the wharf-end waved his tail in the air. It was just the time and place to read again and enjoy to the full the stirring pages of *Moby Dick*, and we were talking over some of the incidents of that wonderful story when mention was made of another whaling classic (a copy of which we had aboard), Frank Bullen's *Cruise of the Cachalot*.

The Cruise of the Cachalot! A flood of memories and emotions rolled over me as I thought of men and times long since departed, for the *Cachalot* is said to be sketched from my father's and my own old ship the *Splendid*,

once of Port Chalmers, New Zealand. Bullen's yarn makes a fine story, of course there's no denying that — but — it is neither an authoritative nor accurate work on sperm whaling. Strangely enough, it has come to be considered so. Moreover, for me at least, it is badly marred by the ridiculous lingo which the author has put into the officers' mouths and the mean and false (to put it mildly) picture which he has drawn of the episode of the burial at sea. Fair enough otherwise, though, I repeat, not at all an accurate picture of whale hunting. Perhaps my feelings are too keen on these points but that is unavoidable, for the "Mr. Count," later "Captain Count," of the story was my father. "Earle," you see, becomes "Count," a play on words. However, Bullen was probably about as fair as most Englishmen of those days could be to a Yankee. Especially when writing for English readers. Times, I am glad to say, have changed for the better.

Many were the adventures of the old *Splendid* in her long career from the time in the early thirties when she was launched at Mattapoisett, on Buzzards Bay, until she left her old bones bleaching on Kaipara bar, North Island, N. Z. Many were the ups and downs of her fortunes, and many a well-earned dollar did she pile up for her owners. Twice she gathered in a rich harvest of the grey treasure of the (countless other well-manned whaleships have girdled the globe time and again without securing the slightest trace), the second time in quantity almost beyond belief. It was my good fortune to share in both of these adventures, the first time as mate, and the second as master.

Look now at your chart or map of the Southern Pacific and you will find close to the intersection of the 44th parallel and the 177th meridian west longitude, at a distance of about 600 miles from the famed Solander Isles, the little group known as the Chatham Islands. One of them, Star Quay, which contains a small fur seal rookery, even today is marked "P.D.," "Position doubtful." A little to the west of south lie two stepping stones to the Austral pole, Bounty and Antipodes Islands, "provision depots" for the shipwrecked, set solitary in the dark green ocean. Dark green or grey is the correct description, for your true deep blue sea belongs only to the regions of the Trade winds and the Gulf Stream. The waters about them were once dotted, in season, with the sails of cruising whalers, but now the wandering albatross and the mollyhawk, with an occasional exploring vessel, are the only visitors.

Early in February, 1879 (the summer season in these latitudes), the *Splendid* was cruising on the Chatham Islands whaling grounds back and forth from three to 150 miles offshore. This was about a year after Bullen had left her; that is, as nearly as we can determine, for there are many obscure details. Not the least of which was (we think), an assumed name. John M. Soule, of Middleboro, Mass., was master, a man then about 65 years old. "Good old Soule" he was called to distinguish him from two other contemporary captains who bore the same surname. The nicknames of the other two were just as picturesque, but they are a little too uncomplimentary to print here.

Cruising along well offshore on the 44th parallel we raised a large sperm whale late in the afternoon of a pleasant day, made fast and captured him without trouble (although he was a hundred barreler) and by sundown we had him killed and chained to the good old *Splendid's* bow. The night passed without incident; early the following morning we set to work cutting in and were unpleasantly surprised to find that the body was sinking. Now this was serious, for he was a valuable prize; it was strange, too, for the tradition has always been that when a whale sinks he has been sick. "Ambergris whales sink" is an old saying in the fishery. And when chasing him we had not noticed anything wrong.

"Get a move on yer, boys. Look alive there!" called the Old Man in his mild way to the men working diligently away on the stage as the tackles creaked and groaned under the terrific weight. "Ay, ay, sir!" We got the head in and the body skinned — all but the small and tail which we also wished to save. "Hurry up and unjoint him there," sang out the Old Man again, and to save time I shoved my spade way down about eight feet forward of the neskit which is the usual point for unjointing. At the extreme end of the cut I was surprised to feel the sharp spade rebound, a curious sensation, much as if it had struck rubber. I finished unjointing with a last slash across the great entrails and the carcass sank, leaving the tail, the small and the gaping section of the large intestine. It was then about four bells in the forenoon watch; the weather fine and clear and the sea smooth as the old ship, hove-to, moved sluggishly along. Resting after our work I looked for an instant toward the horizon and then alongside, where, to my surprise, I noticed some large lumps of dark material come floating up, varying in size from a few inches to a foot or so in length and exactly the color and general appearance of an old potato. Yes, that is exactly what they looked like. There were perhaps twenty or thirty of them. Scooping up a few with a long handled net, I lifted them out and shouted (more as a joke than anything else, for I had never seen the like before), "Here's your ambergris, sir."

"What, what's that?" said old Captain Soule as he came running to the gangway, and then when he saw it, "By God, my boy, save every bit of it, that IS ambergris!" Sure enough it was, 27 pounds in all, and probably as much more had sunk to the bottom, for the largest piece was sliced right across. So that was what had caused the spade to rebound. We gathered it in and stored it. £5, 10s 6d ($27.62) per ounce was the price we got for it in the London market, and with our 1000 barrels of sperm oil at £95 per tun (or $47.50 per barrel) it made enough to pay off the mortgage and declare a dividend for the owners. Best of all, it put the good old skipper on his feet financially and he was able to return in comfort to America. Later, I think, he went to Texas to spend his remaining days and died there. Like Captain Voss of the *Tilikum*, he was a great believer in the medicinal virtues of salt water, though I never knew him to take any of his own medicine. Poor old fellow, he had a hard berth on the *Splendid*, the Yankee skipper of a British ship!

Three fairly prosperous years for the old ship rolled by and at daybreak on the second of October, 1882 (an ever memorable day for me), she sailed from Pitts Island under my command, bound for the famous sperm whale grounds around the Pyramid. This is the southernmost islet of the Chatham group, a grim black mass of rock about three miles in circumference and about 1500 feet high, everlastingly crumbling, and cracking, and weathering away. The fragments, big and little, slip and tumble down the slopes with fearsome roars — regular avalanches of rock they sometimes are — then splash into the deep water, for the shore is bold, twenty fathoms close by and a hundred fathoms and more within a mile on the southeast side. It's a great place to fish, too; big yellow tails and grouper and blue cod swarm there in wonderful abundance. I remember once filling our boat to the 'thwarts with them, when our ship suddenly signalled the return. We pulled swiftly back,

dumped our fish on deck, took in the whaling lines and in less than an hour we had a hundred-barrel sperm whale killed and alongside the ship. Those were stirring times!

But to return to the second of October, 1882. We sailed steadily along with a light northerly wind, fine weather, and the regular old ground swell of the South Pacific rolling in from the S.W. At about eight bells we arrived off the south end of the rock. Pat Ryan, of Hobarttown, Tasmania, was at the wheel, a typical Tasmanian sailor, warm-hearted, jolly, care-free and fond of the booze. He would come on board for a year's cruise, all of his outfit tied in a bandanna handkerchief. "Put your wheel up, Pat, and steady her on any course you may pick. If the men at the masthead raise a whale while you're at the wheel I'll give you a bounty of a pound of tobacco!"

"Ay, ay, sir," he answered as he swung her off to southeast and steadied her. "Southeast, sir," he cried, "and I'll stay here all day if I don't get that pound of tobacco."

Whaling bark *Wanderer*, one of the last of New Bedford's once big fleet. From a painting by Duncan Gleason in the collection of Mr. Morgan Adams.

We had been running on that course for about half an hour when the welcome cry, "Ah Blows, Blows, Blows!" came down from the masthead. "What do you see there?" "A number of whales off our lee bow, sir, going slowly to the eastward. I call them sperm whales." Climbing at once to the masthead and looking through the long glass I saw them, sure enough, pretty well scattered, though — one here, two there, and so on. "Call all hands there, Mr. Mate, and get your boats ready!" I headed the starboard boat myself in those days, for I had a good shipkeeper to take care of the ship, and I liked the game of catching the whale. What says Professor S. E. Morrison in his fine *Maritime History of Massachusetts?* — "Whalemen enjoyed a variety of adventures such as no other calling approached, such as no millionaire big game hunter of today can command." Well, he is not far wrong.

Our chief mate, Mr. Cook, had now come up to the masthead alongside of me to watch the movement of the school, the nearest whale being about three-quarters of a mile away. "When they turn flukes you will lower the boats, Mister."

"Very well, sir."

Presently they began to turn flukes and in five minutes had all gone down. As they had then been in sight about half an hour we felt pretty sure that in about an hour's time they would come to the surface again and we laid our plans accordingly. Then, to the officer of the deck: "Square the foreyard and heave the ship to; wheel half way down. That's well! Lower away, now, and spread out your chances half to three-quarters of a mile apart. One of us ought to strike one."

Setting our sails, we ran down our estimated distance, and there slacked off our sheets. We lay idly on the water for perhaps fifteen minutes more when, "Here he is, sir, on our lee bow!" sung out Grant, my boat-steerer, and "Flag half mast, sir!" called out the after oarsman immediately afterwards, meaning that the ship had signalled the position of the whales to leeward of the boats. I hauled aft the sheet, swung the boat off and looking under the sail could see the whale about a quarter of a mile away. "Sing out every time you see him spout, Grant!" "Ay, ay, sir." Then, "Flag down, sir!" called out the after oarsman, and "I don't see him any more!" shouted Grant.

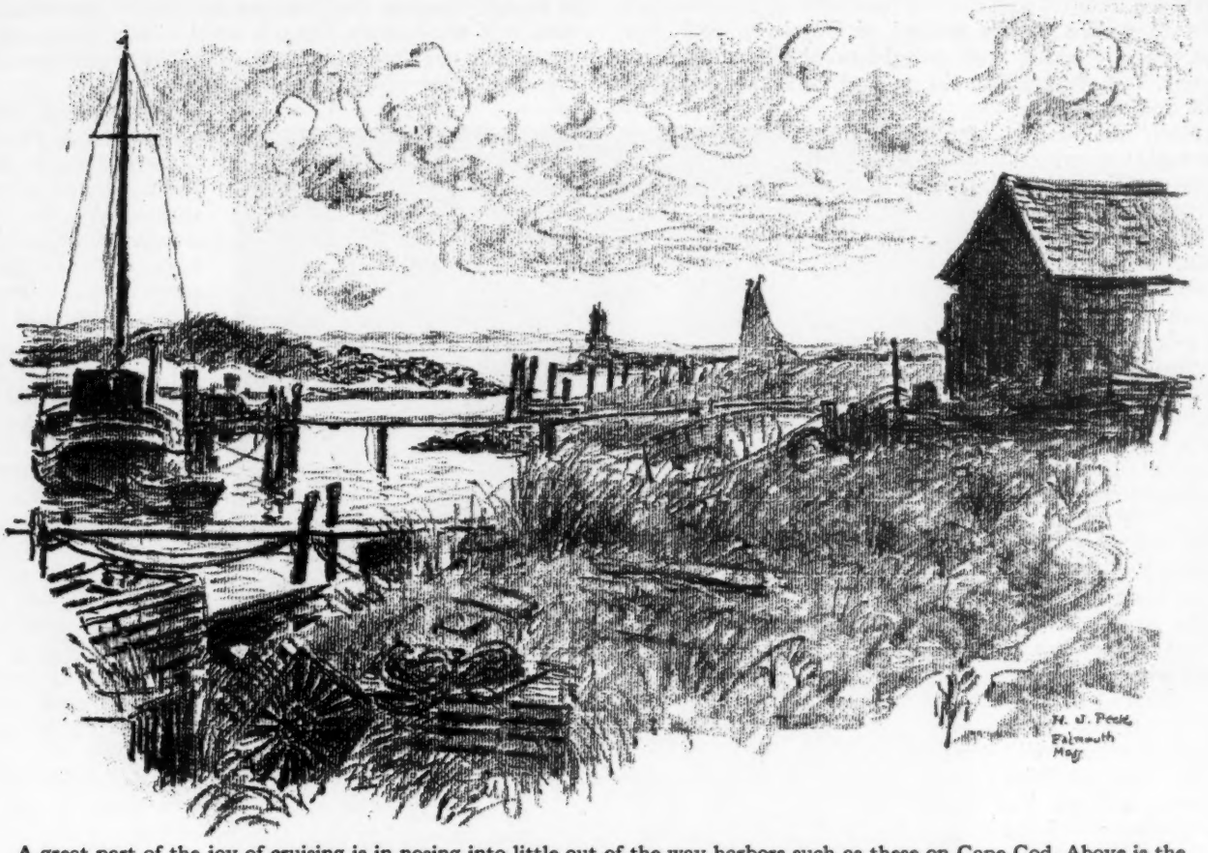
"That's strange," I thought, "something's wrong here — whale up before his time, spouts twice and goes down again when he ought, by all the rules, to have stayed down forty minutes longer and ought to have spouted at least eighty or a hundred times after he came up." "Well, sir," says Grant, seeming to answer my thoughts, "he's a sperm whale sure enough, for I saw his head, hump and spouthole. Must be some kind of a freak!"

I hauled in the main sheet again a little and we jogged along in the direction of his course at a speed which we thought was about right to keep in touch with him. Half an hour passed, then another ten minutes.

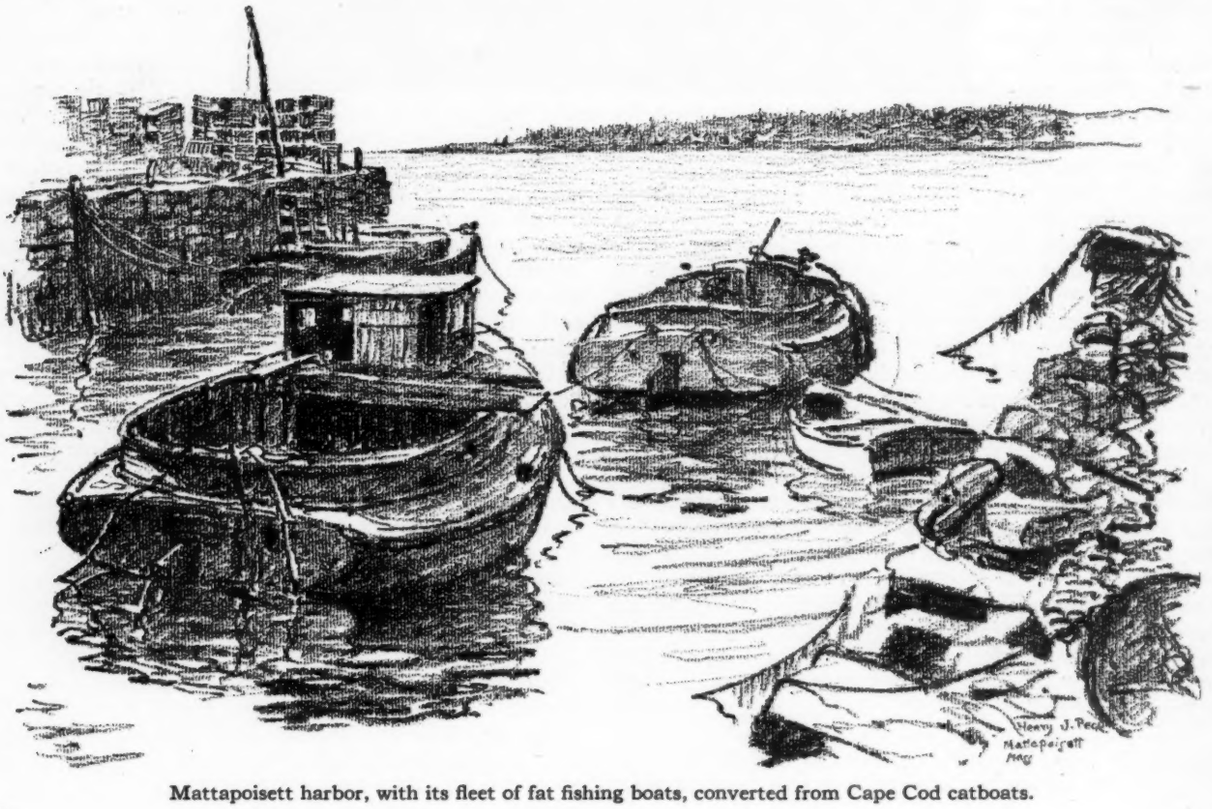
"Here he is, here he is, sir, two of them!" calls out Grant excitedly. "Keep her off a little, sir; steady, sir," as I swung the boat off and we sailed down on them, two beauties, about twenty feet apart and swimming along, humps well out and spouting away contentedly, not a care in all the world. The right one was the largest but the left one carried a peculiar looking hump with a sort of ridge or large thick wrinkle on it. "Take the left one there, Grant, the one with the funny hump, put your irons in — you know where — and hit him hard!" "Ay, ay, sir!" and the old boat slipped between them at a five-knot clip, but smoothly, with hardly a ripple.

(*Continued on page 126*)

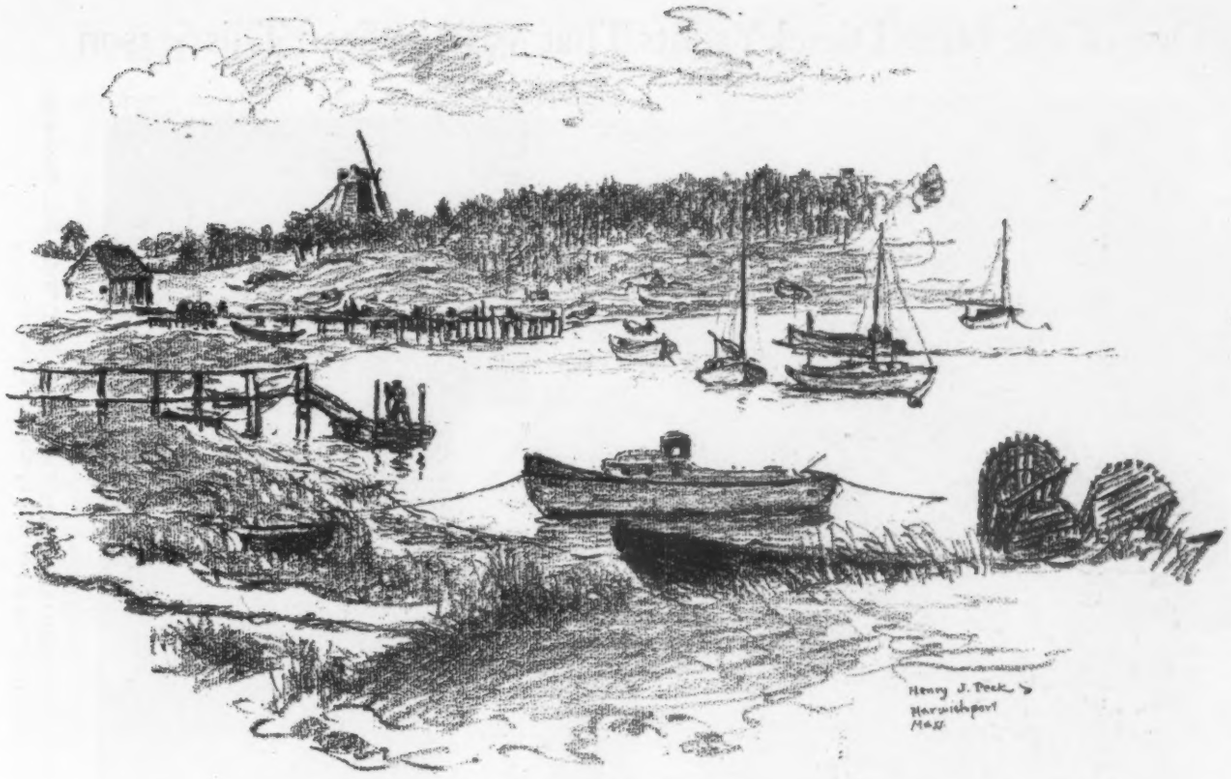
Some Cape Cod Harbors



A great part of the joy of cruising is in nosing into little out-of-the-way harbors such as these on Cape Cod. Above is the entrance to Falmouth, Massachusetts. From crayon drawings by H. J. Peck.



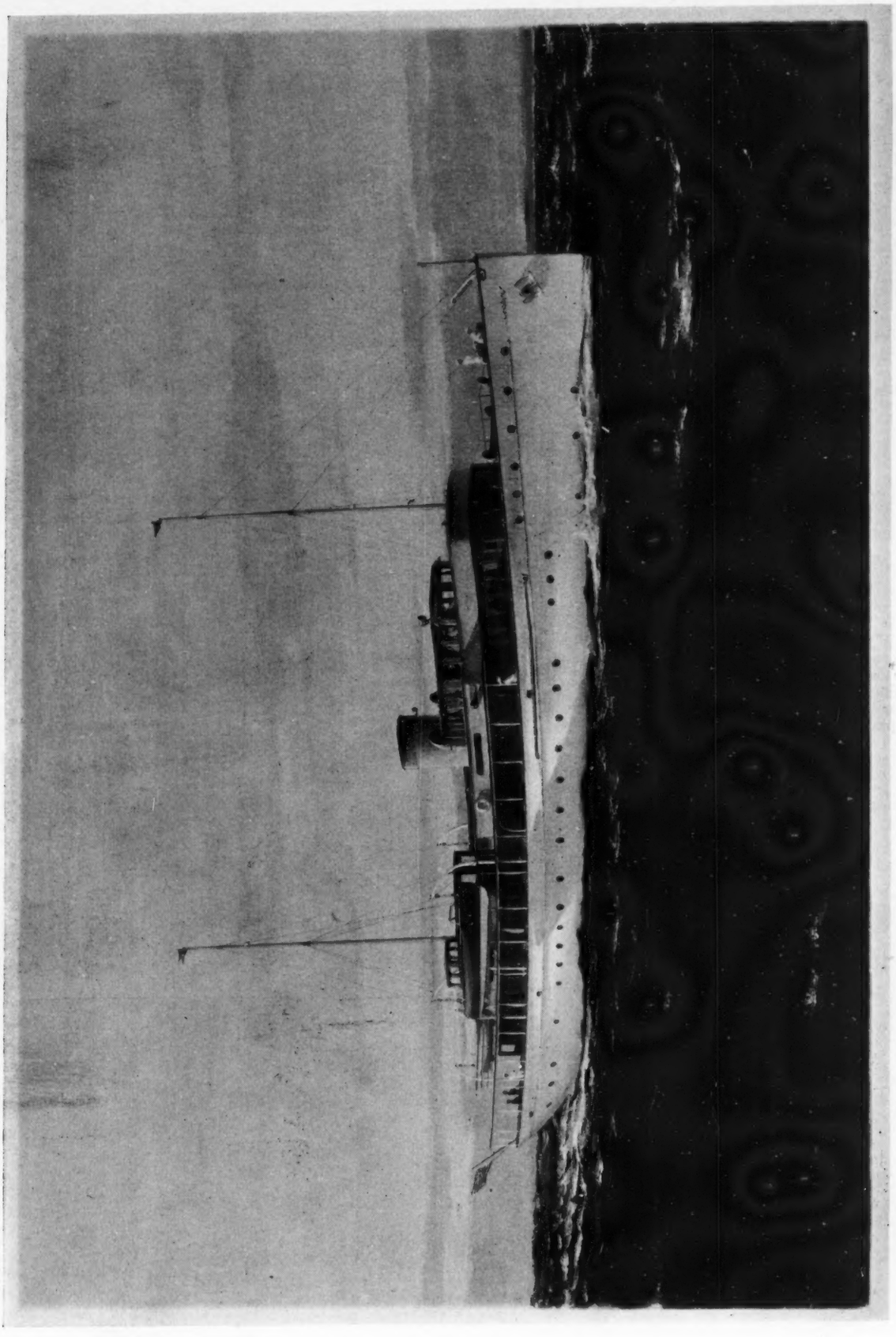
Mattapoisett harbor, with its fleet of fat fishing boats, converted from Cape Cod catboats.



At the head of the cove at Harwichport, Massachusetts. Dories, lobster traps, and the varied fishing fleet provide an atmosphere that is typically Cape Cod.

Looking down a lane to the harbor at Hyannis.

One of the New Diesel Yachts That Will be Seen This Season



Saramar III, a new 153-foot Diesel-powered yacht for Charles T. Fisher, of Detroit, which will be in commission early this summer. Designed by J. H. Wells, Inc., *Saramar III* is an unusually handsome craft. She will be powered with two Winton Diesel motors. From a painting by Gilbert Dunham.

From Nova Scotia To Oyster Bay

By FREDERIC D. POWERS

THIS is an account of an offshore voyage from Chester, Nova Scotia, to Oyster Bay, N. Y., in the schooner *Buccaneer*, manned by four amateurs. Only one of these four had ever had any previous offshore experience, but all were thoroughly accustomed to handling small sailing craft.

To begin at the beginning — the *Buccaneer* was built at Chester, Nova Scotia, from designs by F. Jay Wells, during the winter of 1927–28. One of the obvious advantages of building in Nova Scotia is that one is immediately supplied with a legitimate excuse for taking a 600- or 700-mile ocean cruise. Nothing like a good logical reason to quiet anxious families and help bolster up the genuine "just for fun" motive.

The *Buccaneer's* dimensions are 49′ 10″ by 39′ by 12′ 11″ by 7′ 8″. She is of the semi-fisherman type with 10,000 pounds of ballast outside and 4,000 pounds inside, and typically Nova Scotian in her lines. She was designed for offshore work and proved to be able, and also as comfortable as any small boat can be in a heavy sea.

The crew consisted of the old schooner *Voyager's* crew; five of us who had sailed together for some years. As our vacations were limited to the customary and all too short two weeks, it was imperative that no time be wasted between the time of our arrival at the shipyard and putting to sea. Another reason for rushing our trip, perhaps relatively unimportant but still to be thought of, was that I was to be married on June 21st and the invitations were already out.

"If she is ready to sail on June 5th then it will be the first time in my experience that I ever knew a yard to have a boat ready on time," was the succulent remark of one of the crew. Visions of arriving at a yard some four years before, anxious to get underway at once, and then working a week helping (or hindering) the riggers passed through the minds of us all. The *Buccaneer* had not been launched until May 19th and it did not take very complicated calculations on the part of the groom-to-be (or not-to-be) to see that it was going to be a close squeak.

An advance party consisting of two of the crew arrived at Chester on June 1st and immediately got busy getting stores aboard and helping the builders with the finishing touches. The rest of us, barring Wink, arrived at Halifax June 4th. Wink had missed the steamer in New York due to a mistake by the *Buccaneer's* navigator in giving him the sailing time. What price navigator? If he can't even keep a ship's sailing time straight what chance has he of juggling sidereal time properly?

Gathered in the cabin the night before our departure, after a hard day's work with the stores, one of us remarked upon the versatility of the crew and pointed out that we had a lawyer, an insurance man, a corporation executive and an engineer. Then someone spoiled the picture by piping out, "Too bad we haven't got a sailor."

Our first misfortune occurred when one of the crew received a radiogram on the steamer on the way up telling him he was needed at his office immediately. He left us June 5th, a very disappointed man and we were of the same mood concerning the bad news. We planned to shanghai him but saner minds intervened. As he departed, Wink arrived, the last stores were aboard and the ship ready for sea. Just as we were casting off Mrs. Wells very kindly presented us with a delicious pot of home cooked baked beans.

***Buccaneer*, ready for her initial cruise from Nova Scotia to Long Island Sound.**

At 10 A.M., June 5th, the "dink" was hoisted aboard and we stood down Mahone Bay under the four lowers and the Scripps. A ship really was ready the day promised by the builders! There was practically no wind and not a cloud in the sky. At 1:30 we had reached the open sea and the *Buccaneer* rose for the first time to the long glassy swells of the Atlantic. Departure was taken from Pearl Island Light, the last land we saw until we picked up Montauk Light, nine days later. We had optimistically figured that our arrival at Oyster Bay ought to be on the tenth, or the eleventh at the latest, and so we had told our friends.

The course was set to give us a good offing, for if it came on to blow we wanted plenty of room between us and that rocky Nova Scotian coast. A gentle breeze greeted us at 2:30 and the engine was stopped. By 11:00 P.M. the wind had disappeared completely, so we started the engine and lowered the sails as their slatting was terrific in the heavy southwest roll. This condition prevailed until noon of the sixth, with the sky becoming more overcast and the barometer steadily dropping. The noon position by observation gave us 131 miles since the previous noon. If anyone had told us then that would be the longest day's run of the passage we would probably have thought that he had been doing a little extra splicing on the main brace. But that was the way the days' runs actually did turn out. The barometer had dropped two tenths in 24 hours and it didn't take much of a seaman to see from the appearance of the sky and the sea that Old Man Weather was soon going to test us out. At 1:00 P.M. we tucked two reefs in the mainsail. A brand new mainsail, stiff as a board, soft hands fresh from office work, a heavy rolling sea and a cold drizzling rain, and you have all the ingredients of a very miserable time. By 3:00 P.M. the barometer had dropped

to 29.85 (30.00 at noon) and it was blowing 30 miles an hour from the south.

Sam immediately noticed the certain and sudden consequence of the falling barometer and for the rest of the cruise never left the barometer if it showed the slightest disposition to fall. At night when he had the watch below he would get up out of a sound sleep and a warm bunk three or four times an hour and put the flash ight on that barometer. If it had dropped one one-hundredth there was no more sleep for him that night. If it had happened to go up that amount his appetite immediately returned — and what an appetite!

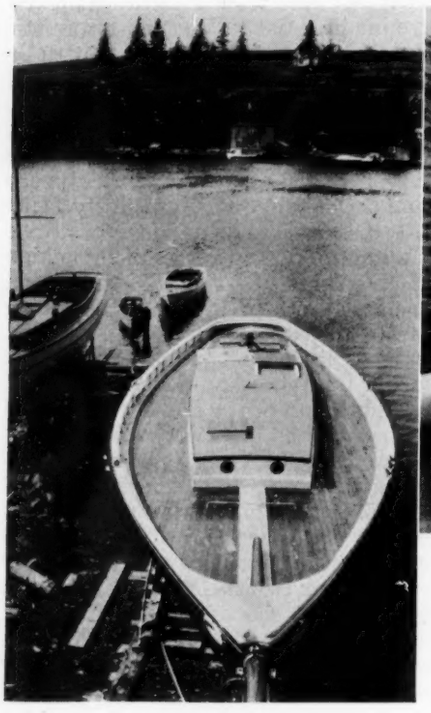
We soon stowed the mainsail and made excellent progress under foresail and jumbo until 5:00 P.M. By that time the wind had increased to an estimated 40 miles and the seas were crashing past. We could make little headway to windward against those seas; it was cold and wet and the first signs of *mal-de-mer* were everywhere beginning to be present. The barometer was now 29.78. We then hove-to under reefed foresail and all hands turned in. It was wonderfully dry and warm below, thanks to the good fire burning in the stove. Under shortened sail the motion was much easier. Seasickness increased, however, and we were indeed a sorry looking crew out there tossing on the edge of Brown's Bank.

At intervals one of us managed to reach the cabin hatch to have a look around on deck to see if everything was all right, but that was the extent of our exertions until after 5:00 A.M. on the morning of the seventh. At that time we crawled out to a cold, gray day and found little or no wind, but still a heavy sea running and a rising barometer. We each wore three or four shirts, two or three sweaters, pea-jackets, oilers, boots and mittens and even then a half hour at the wheel was enough at a stretch. And then wasn't that cabin stove a Godsend! We started the engine, but at 9:35 A.M. it stopped through lack of gas. We had not taken very much with us as we had figured that we were on a sailing cruise and not a motorboat cruise. We were not particularly concerned when it was entirely used up, although we had intended to save some for an emergency.

Standing out for sea.

The sun was invisible all day and no sights were possible. Our dead reckoning position at noon gave us a day's run of only 59 miles. A dead reckoning position, including a hove-to period, carries little confidence. The wind remained practically zero for the remainder of the day and night and we did a good deal of slatting around but made a little distance as the seas gradually grew calmer.

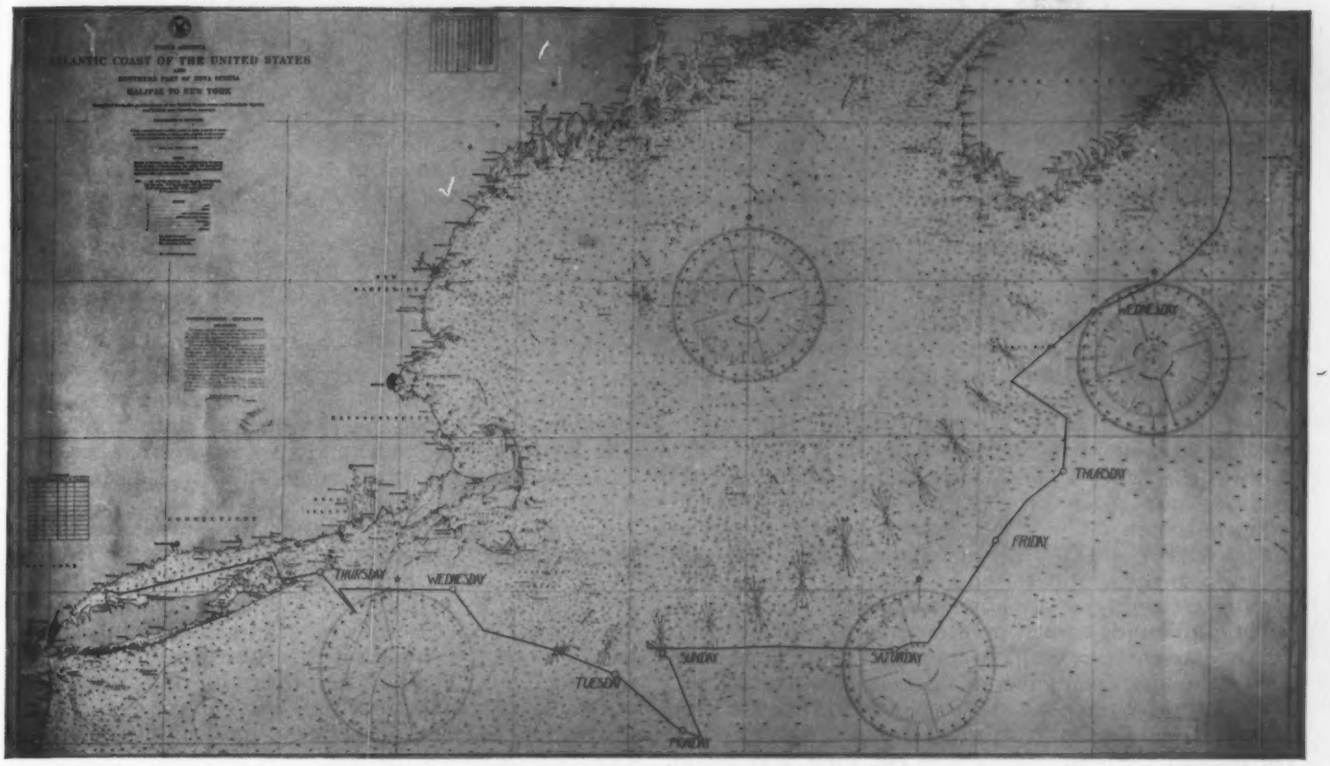
At 3:00 A.M. the next morning, June 8th, a light air from the W.N.W. gave us barely steerageway. This condition prevailed until noon. The sun and the horizon were very distinct and our position at noon showed only 38 miles for the day's run. Reckoning our position back-



Rolling to the Atlantic swell.

At left: A deck view of *Buccaneer*, 50 feet of real boat.

Right: Jogging under shortened sail.



Track chart showing course from Chester to Oyster Bay.

wards from this established point to our D.R. position of the day before, we found the latter was about 30 miles out. That all helps to prove that after a small vessel has been hove-to for a period of twelve hours or more in a heavy sea it is almost impossible to calculate her position. The error was in our favor, for we had actually made 88 miles the day before instead of only 59. Perhaps the ebb tide is strong over Brown's Bank, or perhaps we actually walked to windward while hove-to. In case of disagreement between observed position and the position by D.R., I believe in throwing the D.R. position overboard, unless you are skeptical of your chronometer. We carried only one chronometer and had no radio with which to get a "tick." We had rented it in New York from a reliable dealer for ten dollars for the trip. It had a well established rate and we checked it by radio tick on the steamer en route to Halifax and found the rate unchanged in spite of running with it in our arms tbrough several city streets, followed by giving it a rough taxi ride in our wild effort to catch the steamer.

During the afternoon it breezed up considerably from the W.N.W. and we made excellent time under the four lowers with two reefs in the main. It certainly was no weather for a double-reefed main, but our hands were still unused to the rough treatment they were getting and we were in no mood to do another reefing job. We had, however, all recovered from seasickness by this time and were not troubled by it again; in fact, we were just beginning to enjoy things. About 9:00 P.M. the wind died away again and by midnight it had completely disappeared; so we lowered all the sails to stop the chafing and the noise. We then turned in and had a good night's sleep.

We were becalmed until about 9:00 A.M. the next morning (June 9th) when a light air came out of the S.E. and we set all four lowers. Conditions for sights were perfect and several sun sights and two moon sights established our position closely long before noon. By that time we were slipping along at about seven knots. The noon position was 128 miles due east of Nantucket Shoals Lightship, making the day's run 64 miles. During the day the wind increased, and the barometer dropped steadily. Each one-hundredth drop was loudly announced by Sam. At 9:00 A.M. about half of the lacing fastenings on the main boom let go. They were small brass screw eyes entirely inadequate for the job. After putting on emergency lashings we lowered the mainsail, as the wind was increasing steadily and was now blowing about 40 miles. The main had to come off sooner or later and we had no desire to call all hands during the night. We were beginning to have a healthy respect for that mainsail, especially when it was cold and wet, with a heavy sea running, which seemed to be quite frequently. We next took off the jib. Discovering two important nuts loose on the steering gear, we tightened these up and then the watch below turned in. It was the beginning of a wild period. On deck it was extremely cold. The foresail and jumbo were driving her along at a good speed, but the wind veering more and more to the S.W. was heading us and making it very difficult for us to hold our westerly course. We were now bucking the heavy seas which made sleep below very difficult because of the noise as she crashed into each one. Sam kept us well informed concerning the barometer, which was dropping steadily.

This condition gradually grew worse during the night and about 5:00 A.M. the next morning (June 10th) a high sea was running, the sky was overcast and it was very cold. The noise below from the crashing seas was terrific. The wind was still from the south and blowing force 7 to 8. Nantucket Shoals would soon be directly under our lee. Nantucket Shoals Lightvessel was 35 miles due west of us. Wink, whose watch it was at the wheel, called all hands on deck. The lacing on the fore gaff had chafed through and the foresail was about to part company entirely with it. We headed her into the wind

and lowered the foresail and jumbo as quickly as possible. With all the canvas off her, the rolling was greatly increased and it was a ticklish job trying to stick on the wet, slippery cabin top, rigging a new lacing. And a cold and wet one. We were making leeway towards the shoals, although we had plenty of sea room for a while. It took us about an hour to fix the foresail. Rather than continue on the same course and attempt to weather the shoals, we decided to head out to sea again where we had plenty of room. We had had no position by observation since the previous noon and might have been considerably nearer the shoals than our D.R. showed. If something else should carry away we *would* be in a fix. So we put the jumbo on her, wore around and stood out to sea under that sail alone on a course E. by S. She was rolling heavily, but not a drop of solid water was coming aboard. After sailing five days to reach the lightship it was heartbreaking to have to turn our backs on her and sail the other way. All day we headed out, making little headway and lots of leeway. About 5:00 P.M. the wind dropped somewhat and we tacked to the southward under foresail and jumbo. At eight the seas were still heavy from the southwest and we were very tired after our strenuous day, so we hove her to under reefed foresail and all hands turned in, except Sam, who stood his regular barometer watch. A couple of shots of the sun late in the afternoon gave us a dependable fix.

By 4:30 A.M. the next morning (June 11th) the wind had veered to the N.W. and had dropped considerably. We hoisted the four lowers and got underway again. It was a beautifully clear day, but with no wind. It seemed that we either had too much wind or not enough. Except for the hours between nine and ten and four and five, we did not log over four knots all day and by midnight we were practically becalmed again. Our noon position put us 60 miles southeast of the lightship.

Tuesday, June 12th, dawned bright, clear and hot (for the first time), but still no wind. One week at sea! We brought all the blankets, mattresses and bedding on deck for a good sunning. We stripped and jumped over the side, the first bath in over a week. Strops and razors were making their initial appearances. A school of porpoises were so close we could have jumped on their backs. The sea was without even a ripple, the sails hung limp, and the engine was gasless. The log line hung straight up and down over the stern. Morning sights had placed us 22 miles S.E. by E. of the lightship. The day's run at noon was 38 miles. Shortly after lunch, while most of us were lying about the deck enjoying the warmth and wondering if we would ever get a good sailing breeze, we sighted a steamer standing towards us. We made her out to be a tanker and decided to hail her and ask her if she had any gas to spare. When she rounded to and stopped we asked her through a megaphone if she could let us have some gas. She proved to be the S.S. *Vilja*, of Oslo, Norway, Captain Jacob Jacobsen, outbound with more than 300,000 gallons of it on board. What luck! Captain Jacobsen said he would be glad to let us have some if we would send a boat with some containers. We launched the "dink" and Wink and Dunby, armed with various buckets, pans, pots and other miscellaneous containers, rowed over to the *Vilja*. Captain Jacobsen, out of the kindness of his heart, added an old 10-gallon paint can to help increase our supply. He was heartily thanked. The "dink" returned, and we had gas in our tank once more. We broke out a can of Norwegian sardines and celebrated the opportune arrival of the *Vilja*. The engine was started and we headed on course 293° for the lightship. The landfall was made at the time predicted (3:56 P.M.) about two miles off the course.

After passing the lightship we stood in for Montauk, 110 miles away. At 6:00 P.M. a light breeze came in and the engine was stopped to conserve our supply of gas. About that time Coast Guard Destroyer No. 2 was sighted coming up astern, but she seemed to be in no hurry to overtake us. We had two bottles of liquor on board, presented to us in Nova Scotia just before we sailed. We were uncertain of the law pertaining to that situation. We were U. S. citizens on a vessel that was then outside the 12-mile limit and, in fact, had never been inside it. We were 100 miles east of Montauk. Although flying the American flag, we were not at that time officially registered as an American vessel. A hasty consultation. The destroyer was now quite near. Better be on the safe side. We were insured against everything but confiscation. So Dunby dropped the liquor and a few tears overboard and we headed up into the wind. The destroyer hove-to a hundred yards away, a boat was lowered and an officer came aboard. He was very pleasant, and after going over our clearance papers and asking a few routine questions, made himself at home in the cabin. He told us to keep clear of the battle fleet which was holding maneuvers that night off Montauk. He inquired if there were anything he could do for us. We asked him if he had any gas to spare, figuring that we did not have enough if this calm weather persisted. He had about 20 gallons sent over and this we mixed in our tank with that from the *Vilja*.

We tried to start the engine again. But alas, the paint can from the *Vilja* had gotten in its work. The gas line and carburetor were cleaned out after a good deal of effort. Two minutes after being connected they clogged up again. It was no use. Of course, it was our own fault and we admitted it, but that did not make the engine run. During the night, which remained clear but with an obscured horizon, the wind died to practically nothing and we did some more slatting around.

At about 3:00 A.M. the next day, our eighth day out from Chester, a little breeze came out of the S.W. and a heavy fog settled over everything. A fine time to run into the battle fleet. With the wind, the fog increased. We made fairly good time all day, although it was close-hauled work all the way. At 3:15 P.M. we tucked two reefs in the main and kept on, while the helmsman, wringing fresh water out of his mittens every few minutes, could barely see the jib for the fog. At 4:45 P.M., an hour before the calculated (by D.R.) time for picking up the Block Island fog siren, we took the first sounding with the 20-fathom lead line but got no bottom. Approaching Block Island from the eastward, the 20-fathom curve is met about seven or eight miles off the beach. But only three or four miles east of the 20-fathom curve is another 20-fathom curve surrounding Cox's Ledge. So we should have found bottom there, then, after an interval of half an hour to an hour with "no bottom," we should have picked it up again as we neared the island. But such was not our experience. We cast the lead every 20 minutes until 10:00 P.M. but "no bottom at 20 fathoms" was always the result. We had had no fix since leaving Nantucket Shoals Lightship 30 hours before and most of that time there had been a dense fog. It was as thick as pea soup now and blowing about 25 miles from the S.W. Our position was in doubt, although our failure to reach bottom with the 20-fathom line was ample proof that we were considerably south of Block Island. We could have kept on and picked up the 20-fathom line off Montauk, but there was little to gain by that as long as the fog remained so thick. The fog sirens on Block Island and Montauk had not been heard.

(*Continued on page 132*)

The canoe is reviving sailing on the Potomac. Two of the Unlimited Class in the Potomac Boat Club Regatta.

Canoe Sailing in the National Capital

By J. V. Hazzard

MORE than a year ago three of the older canoeists of Washington met at luncheon, and over the coffee cups a discussion as to the feasibility of reviving the sport of canoe sailing developed. It proved a fascinating though somewhat complex subject and the three men slipped back to their respective desks considerably overdue, and with heads buzzing with half-formed plans.

To get things started and to find out just how much prospective material could be relied upon, a series of three races was arranged. These were of the free-for-all type and were held as a post-season event on the Tidal Basin. Members and officers of the local aquatic clubs were invited to act in official capacities and the aid of the papers enlisted to give the maximum publicity both before and after the regatta, and prizes were provided for first, second and third places by subscription of the three promoters.

Howard Greene crossing the finish line, October 20th, winning Class A championship.

Race day dawned cloudy and chill, with no more than a whisper of breeze, but as starting time approached the wind improved and a dozen canoes slipped away at the boom of the starting cannon. Later in the day the wind dropped until the fleet crawled through glassy water, propelled by a movement of air so slight as to be indistinguishable without the aid of a wetted finger, but as no time limit had been set, it was a case of sticking it out to a bitter finish. By far the greater portion of the fleet were rigged with single lateen sails, there being only four tandem sail rigs and one yawl.

During the winter an organization was formed, using the entry list of this first regatta as a mailing list. The Sailing Club now boasts a membership of 17, all but two of whom are active sailors, owning from one to three sailing canoes each. Last summer the club sponsored two regattas and took part in two more backed by the Potomac Boat Club and the Washington Canoe Club; a total of 26 substantial prizes have been in competition and the fortunes of the game have distributed these among seven sailors. All of these races have been well contested and have been featured by the entry of almost the entire club fleet on each occasion. It cannot be claimed that the growth of the club has been phenomenal but the efficiency and appearance of the fleet have improved by leaps and bounds, and competition was keener and keener as the season progressed.

During the early races Howard Greene's big 18-foot *Sailfish* won easily but, though he still holds the Class A, or "Unlimited" Championship, Greene was obliged to drive his craft to the limit to beat James Hood and E. S. McGuigan, both of whom sail skilfully and crack on canvas in true Yankee fashion of the old days.

The canoes are, for the most part, stock model Old Town and Morris products, with a sprinkling of wooden canoes of Canadian make. Some of the fleet are decked with wood or canvas; nearly all carry two sails and sliding seats. There is an even division of opinion as to the effectiveness of leeboards as compared to detachable fins, but metal rudders are almost universally used. Sail areas in the Unlimited Class range from 100 to 140 square feet and there is not a canoe in the fleet boasting a custom made sail or a professional woodworker's product.

(Continued on page 124)

Sunsets Through a Porthole or "Vittles" Afloat

Being the Plaint of Two Overworked Galley Slaves

By M. G. Crabbe and C. M. Baker

HEN yachtsmen gather they are likely to talk about the bar at the entrance to some harbor, the channel up a river or the choice of anchorages here, there or the other place. A bit of shore line and sunset sky seen through onion tears and framed by a porthole are about the only recollections galley slaves have of the entrances to most harbors. As soon as the boat gets in smooth water the cook needs must go below and start dinner, or it will be time to turn in before the dishes are washed. It is a great life. Let anyone suggest starting some place and our minds automatically commence listing supplies. Although crews frequently cook for themselves, it is more ideal if there is a galley angel on board, either paid or amateur, whose one job is the G. P. (Galley Police).

Not only have we spent many days cruising, but we have been off for weeks and months, shipping sometimes as super-cargo or comic relief, often as one of the family, but usually as galley slave. At other times we have collected supplies for short cruises, long cruises and for entire seasons, tasks which vary according to the size and kind of boat and crew. When we run afoul of the people who have bright ideas about cruising "vittles" we are aghast. Cruising and offshore yachtsmen want FOOD — good, plain, wholesome grub. One time when the labels soaked off all the canned goods in the bilge, Harry Pidgeon is reported to have said, "What's the difference, it's all grub."

The big problems are keeping food fresh, cooking on two or three burners, and being able to turn out edible chow if the old tub stands on her hind legs. And when she does, be sure that you do not attempt to use more pots than you have hands with which to hold them on the stove. If you do not believe this, ask Commodore Bonnell about trying to cook bacon and eggs and coffee on the *Islander* going to Bermuda.

The department of food and catering to the inner man is simple and may be easily worked out for the good health of all hands, and their pleasure, too, by steering clear of fancy concoctions requiring elaborate recipes or ingredients, and by turning out the normal sort of meal one eats at home. It is easier to have simple, wholesome, digestible food ready when the crew is called than to have fancy, indigestible things. First and foremost, to keep a crew happy, have coffee ready early in the morning, for the moment a cup of coffee is under a belt the morale and spirit of that man begins to soar.

Here are some of the things that we have found to be of great help in the galley: a clean old, wool blanket wrapped around the ice makes it last longer. But don't steal it from the Skipper's bunk. The blanket may be kept sweet by occasionally rinsing when near port and there is enough fresh water and a little sun and air. When the sea gets rough a life preserver or two make excellent wedges to keep the ice from flopping around and smashing the box. Ice keeps at least twice as long if there is a separate door to the ice chamber so that warm air cannot get in every time food is taken out. Bottles have to be kept on ice, of course, but should be sneaked out as quickly as possible, and the blanket helps to prevent mishaps.

Two canvas bags of about the size banks use for carrying money are handy. Sew a hem in the top of one with your palm and needle and sail twine, put in a drawstring of marline, hang on any old hook and it will keep a slab of bacon in good shape until used up, if the crew has any sort of an appetite. Use the other bag for cracking ice.

The A.B.C. of galley equipment is a coffee pot, frying pan (Down Easters call it a spider), a large stew pot, a colander, flapjack griddles and a double boiler. An "Old Man" once made the startling discovery that cereals were not burnt and do not have to be watched in a double boiler. Down South hominy grits are a good food for breakfast and lunch, but they are not sold north of the Mason and Dixon line. A large yellow earthenware mixing bowl (better have two to allow for breakage) is handy in the galley and wonderful for a lunch made of the preceding dinner's vegetables dumped out of the ice box into the bowl, a little lettuce if there is any aboard, and mixed with French dressing made according to the old saying, "A miser for the vinegar, a spendthrift for the oil, a lawyer for the salt and pepper and a demon to stir it." Put out the wooden plates, jelly, cheese, crackers, bread and butter, yell, "Come and git it," — and that's that.

The galley needs a large bread box with plenty of holes to prevent mold. If the bread crust does turn green it may be cut off and no one will be the wiser; after all, mold is a harmless fungus. If there is a Shipmate going, and the bread gets gray-haired and dry, you can cut or wipe it off, sprinkle with water, put it in the oven for about five minutes and it will come out like a fresh loaf. Dip stale slices of bread in a mixture of milk, eggs, salt, pepper and sugar, fry in butter, and eat with syrup or sugar for French toast.

Any boat that plays around in the ocean should have starvation rations aboard for about three weeks in case she is ever "blown offshore." This has long been a theory and now is almost a superstition on some boats. It really works well, anyway, for the staples are always at hand and then stocking for a short trip is an easy matter. One skipper we recall has traveled thousands of miles on several boats with a huge bottle of malted milk as an anchor to windward. No crew wants to spend any more time than necessary shopping while in port. Almost everyone knows what staples will be needed, such as coffee, milk, sugar, rice, beans, vegetables, etc., and all these, together with White Rock, ginger ale, Vermouth, fruit juices and olives, depending on the tastes of the crew, may be collected ahead of time. Many people do not realize that there are now on the market whole hams and chickens, jellied chicken and tongue in tins and in glass jars that may be dished up hot or cold.

When laying in supplies consider the question of bulk versus nourishment and variety, for there is never any too much room in the lockers for stowing grub. A can of roast beef and a can of mixed vegetables dumped in a stew pot and warmed through is an easy meal, and palatable if the cook chucks in some seasonings. Seasoning improves all canned goods. Besides salt, pepper and paprika, there are lots of things like kitchen

bouquet and Worcestershire sauce with which you can pep up soups, meats, gravies and vegetables nicely after a little experimentation.

Fish, whether caught or bought, are easily cooked in the frying pan. Roll small pieces in flour, sprinkle with a bit of salt and fry in any kind of fat short of machine oil. The flour is also good for pancakes and is always handy to have aboard. Oyster stews made with evaporated milk (as per the cook book) are good rib-liners. Always cut evaporated milk in half with water for cooking. After you get used to the flavor it is as good as fresh milk, especially if you are really hungry. There are other easy ways shown in every cook book for cooking the native fish or shell fish of particular localities.

HI HO— THIS IS THE LIFE!
WHAT'S THE DIFFERENCE? IT'S ALL GRUB
HOLD EVERYTHING !!!
DINNER TIME FOR SOME GUYS BUT JUST 8 BELLS FOR THE GOAT
COME AND GET IT.

It is never deemed advisable to waste fresh water, therefore it is fortunate that sea water has just the right amount of salt for boiling vegetables, so dip up a pot full, unless you are in New York Harbor. Never use any more pots than necessary, put water in all the dirty ones so that they will wash more easily and put them on the floor so you need not worry about their spilling while you are eating. Salt water soap is good for washing dishes in sea water, and the Skipper has been known to mop the plates on deck to take off the bulk of the dirt, but this method and soaking them overboard in a wire basket are not to be recommended. A time table telling how long it takes to boil various vegetables tacked up on some partition is a great help to the man who knows better how to wield a marline spike than to cook.

Many persons seem to have trouble cooking rice, but it is the easiest starchy food to have on a boat after one learns the trick. It stows more easily than potatoes, keeps longer and does not have to be peeled. Fill the largest pot aboard with sea water or salted water and get it boiling hard. Water boils more quickly with a lid on the pot. Rinse a cupful or so of rice and put it slowly into the rapidly boiling water. As the rice is cold the water will stop boiling a little, so stir until it boils hard and the rice is off the bottom and bubbling around in the water. Let it boil for twenty minutes and dump it into a colander, put a little hot water in the bottom of the pot and the colander on top, and set aside until ready to eat. If you have a big platter, put beans or rice in the middle and rice or beans for a border, sprinkle the rice with paprika and the crew will think (the first few times) that Mr. Delmonico himself is aboard.

A good Scotch dish is made of the big yellow turnips that keep so long, cut in small pieces and boiled with carrots, then mashed together with butter, salt and pepper. Onions are indispensable on almost every boat, boiled or fried and usually with steak. Boiling and baking are the easiest ways to cook sweet potatoes, yams, or white potatoes.

Some members of every crew want to nibble all day long and they can be kept quite content if there are crackers, cheeses or nuts about. A big five-pound can of pilot crackers or any other kind that is packed in tin keep crisp. The cheese is handy for macaroni, which cooks easily and quickly, and, with a can of tomato soup boiled down for sauce, makes a whole meal.

In spite of the prejudice all good housewives have for broiling, meats, such as steaks, chops and slices of ham, are quite digestible if cooked in a frying pan. Heat the pan, grease the bottom with a piece of fat cut off the edge, put in the steak and turn it frequently until enough of its own juices are melted out to keep it from sticking. Cooked this way a steak is about as good as one broiled over a coal grate. After putting the steak on the platter and smearing it with butter, salt and pepper, put some water, salt and pepper in the pan and stir the mixture over the heat. This will give you the finest gravy you ever had and cleans the pan nicely. If the Shipmate is going, a pot roast, one of the cheap cuts of beef, is easy. Put the meat in with some vegetables, season, and let it cook slowly for a couple of hours and then dish it up. A handful of cranberries or part of a can of cranberry sauce put in at the beginning will disappear in the cooking and give a flavor to the meat and gravy. Dried beans, a hunk of pork and some molasses put in a covered pot in the oven will go on cooking every time the oven is lighted and eventually and forever be better and better.

Eggs and bacon seem to be the custom aboard boats for breakfast. Infertile eggs will keep for weeks in the ice box, so you can buy quantities of them and be sure they will not spoil if kept fairly cool. The storekeepers in the South sell "fresh" eggs which are really cold storage, but "yard" eggs are fresh. There are dozens of ways to cook eggs and dozens of things to mix with them in omelets and shirred egg dishes. Everyone who has cooked at all has some pet theories and tastes.

Avoid canned food and use as much fresh vegetables, meats and fruits as possible, and the crew will be healthier and less likely to become victims of seasickness.

A wise stunt for the cook is to lay in an extra and secret supply of matches and cigarettes in tin boxes, for some member of the crew always runs short between each shore leave. Then, when everyone has heard the tale of woe until all hands begin to get a little irritated, the cook can bring out a pack or so, for peace at any price is one of the best ingredients of a good cruise.

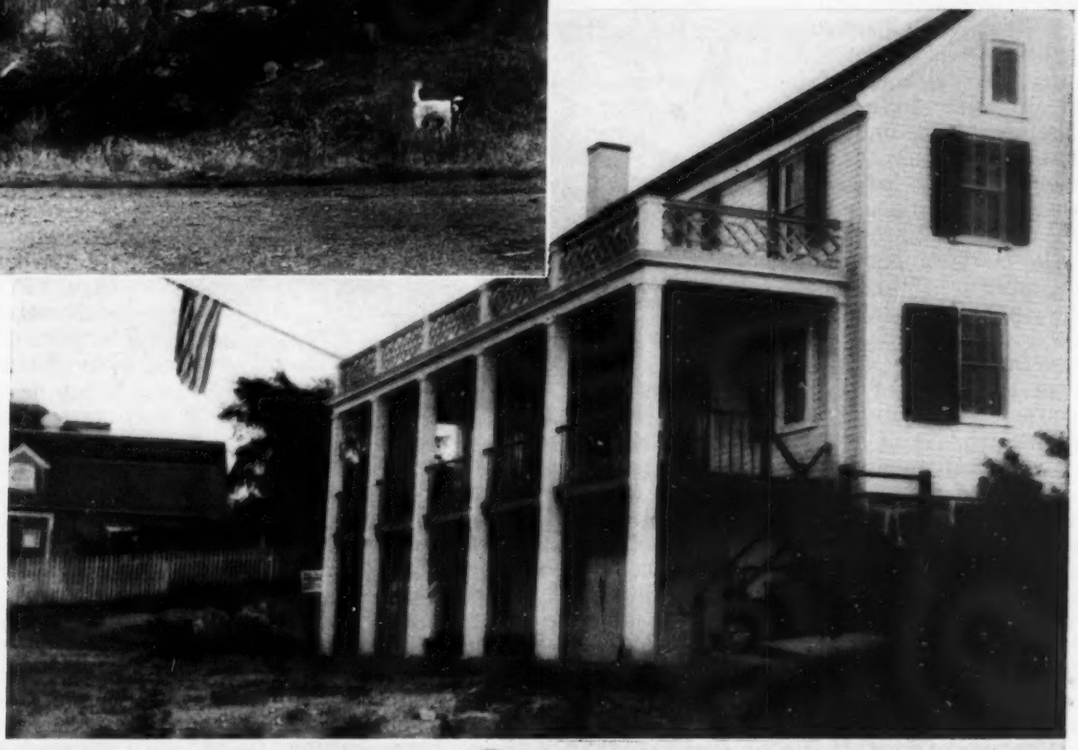
Twelve Entries for Intercollegiate Races

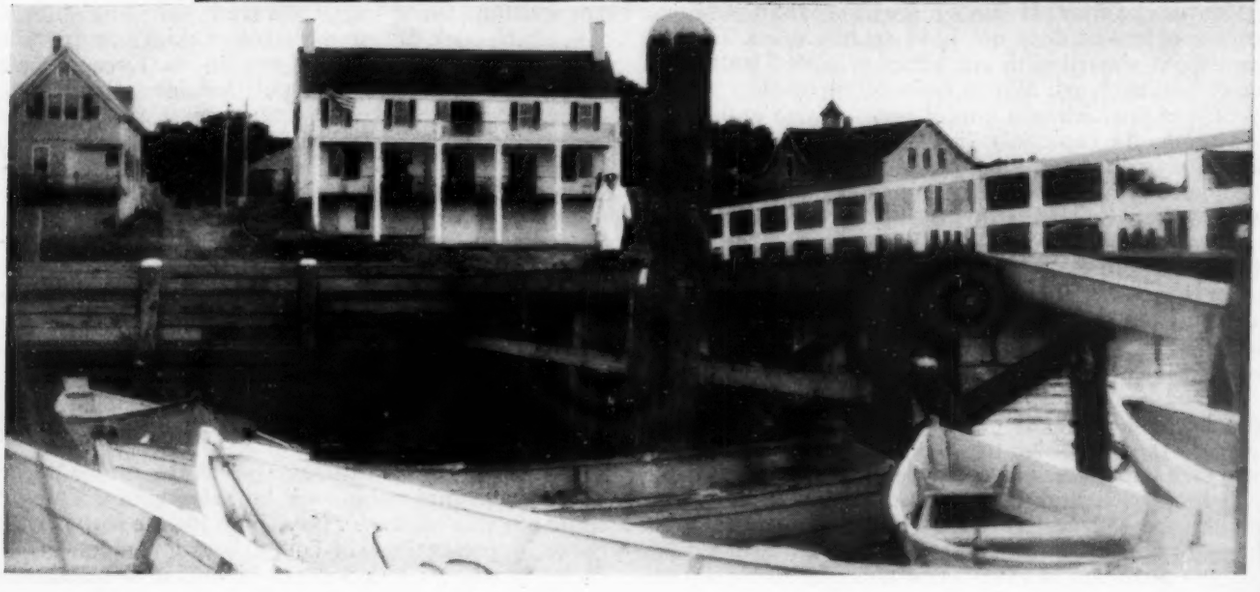
The George May Cup, symbol of the intercollegiate yachting championship, will be defended by Yale in a series of races off Oyster Bay, June 16th to 18th. Twelve crews, representing six colleges, will compete in the racing in which Class S sloops belonging to members of the Seawanhaka Corinthian Yacht Club will be used.

The New Home of the Pilgrim Yacht Club

At Plymouth, Massachusetts, where the Pilgrims landed over 300 years ago, this comparatively young yacht club, taking its name from the early voyagers who settled on the shores of the land-locked harbor, remodeled the old sail loft seen at the left into the comfortable and homelike clubhouse shown below. Inside, the old building was kept much as it was, with its fine timbers, the product of a bygone age, still in evidence.

At the bottom is the clubhouse as seen from the dock, which was also rebuilt, with a float added for landing purposes and for the storage of small boats.





Wander Bird and the Blue Waters

Part III — The Atlantic Passage

By WARWICK M. TOMPKINS

IT is indeed something, when fitting out for an Atlantic passage, to have still fresh in one's mind the lessons of a 2,500-mile cruise. Our summer voyaging had not been without its delays and disappointments, but rich recompense lay just ahead of *Wander Bird* when she passed out of St. Helen's Harbor and headed for home.

The most obvious changes in the ship's appearance wrought by a month at Woodnutt's Yard were the addition of a 35-foot square yard, a quite graceful and decorative boom gallows made of heavy iron pipe so rounded at the corners that a sudden jibe would neither carry it away nor break the boom; and the loss of no less than seven inches of freeboard due to the addition of ten tons more ballast.

The square yard is a permanent affair, and in the permanency of your square rig lies the ultimate success or failure of a squaresail, to my mind. Our yard is suspended in almost exactly the same manner as those of the old square-riggers. There is a chain, made fast to the iron step of the foretopmast, which carries the weight of the yard, its 900 square feet of canvas and the men who work aloft; there are lifts running from the ends of the yard to blocks at the head of the lower mast and thence to the deck, where they are secured by hemp lanyards. Braces, with single whips for purchases, run to the main pinrail. Stout hemp foot ropes with stirrups afford access to the ends of the yard. A strong wood collar is bolted to the yard amidships. Its after edge is cut out to fit the mast to which it is clamped by a separate iron semicircular band. This iron collar is secured by heavy pins to the ends of the long bolts which secure the wooden collar to the spar. This collar, 18 inches wide, keeps the yard forward far enough to permit of its being braced well around.

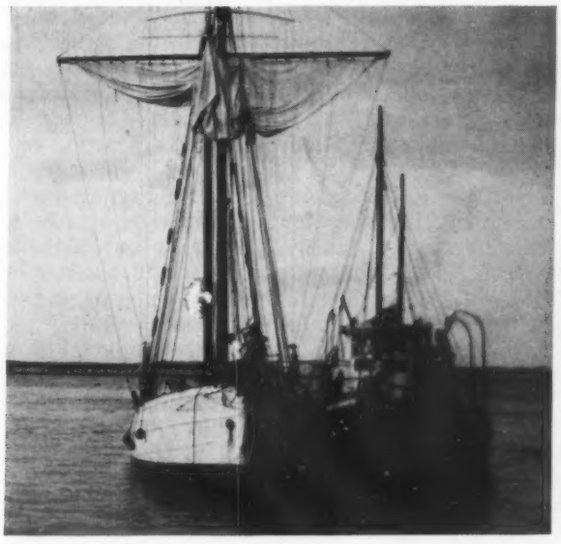
The squaresail is permanently bent to the yard and is furled by hauling it up by clewlines and buntlines and then laying out on the yard to pass the gaskets. Although this is not the place for a long dissertation on square rigs, I cannot leave the subject without wondering why Commodore Martin had to bother with chain in the nips of his blocks and why he chafed through so many lines on *Jolie Brise*. We carried our squaresail day and night for 28 days and never chafed a single line! Furthermore there wasn't the least sign of wear or tear in the whole assemblage. It seemed an ideal rig.

Our decks had been recaulked during the refit, and some thoughtless worker poured marine glue right around the galley stove-pipe. Our passage to Cherbourg, therefore, was enlivened by a fire which burned through the deck at that point and presented a problem it would have been expensive to solve had it not been that we were able to make a perfectly tight and ship-shape repair job with some sheet zinc and cement.

The marvelous summer weather we had been enjoying came to an end as we left Cherbourg in the dawn of September 29th. The glass had been steadily dropping for five days. From 30.50 it had come down, bit by bit. Within 36 hours it was to be at 29.81 with a S.W. gale blowing, Force 9, and *Wander Bird* hove-to in a bad sea between the Lizard and Ushant.

Seasickness reduced the efficiency of our already small crew and we had adequate cause to give thanks for several features which make *Wander Bird* a remarkably easy vessel to handle. Big blocks and small lines are, I suppose, the most important items in the handling of much wet, heavy canvas. All our blocks are about three times as large as those usually seen on yachts. Then we have no scraping, jamming mast hoops to cause trouble. Instead, we use parrals to secure fore and mainsails to the masts. These mast beads are strung on small rigging wire, and the wires are shackled to the sails by means of eyes spliced in their ends. The parrals roll with infinitely less friction than is generated by a flat wood hoop, and in addition the sails can be unbent in five minutes by removing the shackle pins.

Another thing that helped us no end was the heartening presence of the high bulwarks. A man freed from the fear of going overboard will do twice as much work as one faced with this prospect. Wide, flush decks gave a



Wander Bird **at Nassau (left) after her Transatlantic passage. The squaresail gear is shown in this picture.**

(Right) The parrals on mainsail made it much easier to handle this sail than if it had had wooden hoops.

fine foothold on which to work. With our strength reduced, perhaps, fifty per cent, we experienced no difficulty in handling the ship. Extravagant as it may seem, I shall assert that it is easier to handle the gear on this 85-foot, old-fashioned schooner than that of any boat I have ever sailed, including a 40-foot gaff schooner by one of the best American designers.

"Oct. 3, 1 a.m. — Course, S.xW. ½ W. Speed, 4 knots. Wind W.S.W., 4. Bar. 29.87. Sea, choppy, rough. Heavy rain. Wind backing slowly. Ushant bears N.E.xE. Bad slatting. O God!" Such is a typical excerpt from the log at this point, but we were around the corner of Ushant and on the edge of deep water in the bay. Mayhap the worst was over.

After two fairly good days' runs in the bay an exceptionally clear morning produced a backing wind which drove us off our course for Cape Ortegal and pointed our bowsprit toward the uninviting north coast of Spain. We were then some 50 miles offshore. The glass had been at 30.10 at four in the morning, with a not unpleasant N.W. swell. By noon it was down to 29.90, with a sea tersely described as "rotten," a sky rare blue, flecked with soft, spherical cumulus, and the wind piping Force 8 from the S.W. We had come about some hours earlier and were heading N.W., trying to get to windward against the cross sea now piling at us. It became evident that we were in for a blow. By 12:30 the glass had gone down another two-hundredths. We hove-to.

The spectacle of a full gale under a sunlit, perfect sky was so beautiful and so unique that we all kept the deck to watch it. How strange it was to sit warm and dry on deck, sewing on the oil bags that intuition warned would be needed, and watching the glass dropping, dropping to the roar of a 50-mile wind!

At five o'clock we were riding easily on the port tack in the slick of two oil bags with the forestaysail sheeted close. Despite the big seas and the motion, we found — and I cannot explain why — that the helm needed neither lashing nor a guiding hand. The ship rode perfectly, keeping an exact six points from the wind, shifting as it shifted, with the helm hard down. There was not the slightest movement of either wheel or rudder post.

As was but natural, following the same course she did, we were intensely interested in the story of the *Jolie Brise*. It was incredible, in the face of our present situation, to read of *Jolie Brise* in the Gulf Stream where "the rudder gave me much anxiety in this gale. Strong as the steering gear was, every time a sea passed by the rudder would kick until the stout oak tiller bent like a withy. . . . We nursed it by hand, easing it to the shocks. I doubt whether any screw gear would have held out, for it is rigid and would have felt every shock to the full." What a vastly different experience to ours!

I am letting the Bay of Biscay run away with the space alotted me, however, and must stop. That can be another story, for this dry sou'wester turned into a wet one and the glass went on down to 29.59. We spent four days hove-to, daily gaining pride in the way the ship behaved, marveling afresh at the efficacy of the oil — take the bags up for an instant and a dollop would bounce on board — and keeping a careful lookout for steamers.

Slowly, taking advantage of every lull, we worked to the westward. The evening of October 8th we sighted Cape Oretgal, a hungry looking headland with a tiny, weak light too high up to be of much use. One glimpse was enough: we considered the strong easterly set into the bay, the still irregular weather, and at once came about to claw off to the westward over the crests of Atlantic rollers we figured to be some forty feet high. Awe-inspiring legions marching on to Spanish rocks.

The whole series of gales shifted that night. With morning we got the first puff of a northeaster. Six hours later, under jib, forestaysail, foresail and storm trysail, *Wander Bird* was tearing for Vigo at ten knots. It blew a good gale that day, too, but this time we had wind and sea on the beam, and we ate up the miles. At times we had even our high bulwarks hidden under green water that smashed into white foam against the deckhouse and swept aft in the scuppers. For the first time *Wander Bird* had her kind of weather, and for 19 glorious, wet hours we drove her — drove her 180 miles into the quiet of Vigo Harbor where, for a sunny, lazy week, we were to rest and forget the Bay of Biscay. We had beaten the notorious bay. Ship and crew had found themselves. We had parted not so much as a rope yarn in winds which reached 83 miles an hour, according to weather bureau statistics from Cape Ortegal. Time came for another departure.

When the Spanish water boat skipper tried to charge us for eight tons of water I thought we were being subjected to a little crude graft. The tanks hold only three and a half tons. While the argument was waxing warm, Lorenz called me below. "What do you hear?" he demanded. Somewhere below the floor there was an ominous sussuration, a silvery murmuring of running water. Could one of the new tanks have broken? We pulled up the trap of the chain locker. It was half full of water, and it was fresh water! Number One tank had given way. We had been pumping expensive fresh water into our bilges. The argument was settled. Meanwhile, it being sailing day, we had unstopped the sails and got our boats on deck. We were also giving the batteries a final charge. At this moment the light plant quit functioning with an ominous suddenness. Troubles rarely come singly.

To get at the tank we had to move the motor. While moving it we broke open the muffler which, having had a congenitally loose baffle plate, was misnamed. "We'll do without a muffler!" I swore. "Get a plumber!"

When we had gotten into the tank we found a foot-long rent in a welded seam. We thought we could patch it with cement. We did that while a plumber eliminated the muffler and connected the motor direct to the exhaust pipe. To give the cement every chance to work we decided not to fill the tank in Vigo. By this time it was late and we determined to postpone our departure till morning. Meanwhile we took turns at the bilge pump. On this day, too, Hank left us. His departure left us with Paine, Lorenz, "Billy," Paul and myself on deck, our efforts being supplemented in no small degree by Barbara, and Gwen, my wife, both of whom were valuable as helmsmen. Then there was Joseph, our cook, still presiding over the galley.

We got off the following morning, the French yacht *Bleuet*, owned by M. Aubert and captained by his American friend Brockway, kindly towing us out. At the harbor entrance we again met our old friend, the northeaster, still going strong although more than a week old. The glass had climbed back to 30.12. Local weather experts had opined we might expect a few more good days and there was a fixed feeling in the air. At ten knots we bore off S.W. by W. to get a hundred-mile offing. The seas were regular and kind. The night came clear and fine. We were off on our second leg to the Canary Islands.

Such was the start of a 5,000-mile run before fair winds. Not once were we again to be close-hauled.

Steadily, clicking off thirty miles to every four-hour watch, we traveled south. In two days we had Cape St. Vincent — "beyond which lies summer" — abeam though several hundred miles away.

The barometer settled into its regular diurnal range, hovering around 30.17 at ten in the morning and evening, dropping no lower than 30.10 as the clock hands told of the four o'clocks. The moon was brilliant, though a little past full. Squalls appeared, dotting the horizon in true Trade wind fashion. Some we ran through, blinded. Once we emerged from one to find not 200 yards away, close-hauled and bound north, a big three-masted schooner.

We started in Vigo, and maintained throughout, a watch system whereby each watch kept a certain trick for a week, Monday being the day when a dogged watch shifted one into Purgatory — if one was to have the mid-watch — or Paradise, if it was your turn for the early coffee watch. It is very unsettling to dog watches daily; by this alternate method one gets accustomed to sleeping at certain hours and much more real rest is obtained.

The author at the chart table at foot of companionway.

On the fifth day out *Wander Bird* experienced an extraordinary westerly set for which we have been able to find no explanation. Between one midnight and the next, nevertheless, we were set 77 miles to the west of our course, a factor which might have sent us onto the Salvage Rocks had we not been taking more sights than usual. There was nothing wrong with our chronometers; nothing wrong with either the preceding midnight star sight or the one which discovered our deviation from the course. Though we did not normally take daily azimuths to check the compass — having two in close agreement on a wood and copper ship — a hasty star azimuth from both compasses showed them to be functioning perfectly. The wind was almost dead aft and even allowing for the somewhat inexpert steering of the girls — which should have been compensatory — it is hard to imagine that bad steering could have been responsible for more than ten miles of that tremendous error. The whole thing remains a mystery to me, but the chart before me now shows that sudden sharp jog in an otherwise rhumb line between Vigo and Las Palmas.

Reeling off 170 miles per day before the Northeast Trades.

Five days and 20 hours after leaving Vigo we were anchored in Las Palmas, 960 miles away. The Canaries are high, barren piles of rock, as picturesque, if not as inviting, as any South Sea isles. Teneriffe, shooting up 12,000 feet to wreath its head with clouds, is one of the grandest sights in the world. Among all the ports I have seen I would give Las Palmas a high score. It is by no means a small port, yet, from our anchorage just within the breakwater, we could see almost all of it, and there lay at anchor as colorful and picturesque a fleet as the western world affords. There were dozens of locally-built schooners, clipper-bowed fellows, some with amazingly fine lines. Their trading is not always legitimate, it is said. They carry clouds of patched canvas and their main booms overhang the counters by from 15 to 20 feet, footropes being necessary for reefing and furling. How they handle those booms in the big swells of those waters was a puzzle to us. There are queer lateen rigs with graceful spars rising in noble arcs from the stems to flag-flaunting tips 40 feet above and abaft the rudders. An immaculate British cruiser rode at anchor by a surprisingly trim Spanish gunboat.

We watched this interesting fleet for a week before it occurred to us that home was still some 4,000 miles away and that we had better be moving. So we got some fresh fruit and ordered the water boat. When the water boat skipper said "seven tons" this time we did not even argue but paid the bill and proceeded once more to pump overboard tons of fine water. The cement patching of the broken tank had gone. While the pumps were clanking I bought one hundred bottles of local spring water which we stowed away carefully against some such conceivable disaster which might lie along our path. We started with two and one half tons of water for eight people — ample. We chased the sun around the tip of Gran Canaria, glimpsed a military highway gleaming like a strip of silver wound among the mountains, and slid off into the Atlantic, setting the squaresail to the freshening Northeast Trades.

Although we had rigged ample chafing gear on the main rigging, and already the bellying mainsail was flattening out those cocoons of rope yarn, we were careless enough to leave our outer jib set one whole day while running with the wind almost dead aft. In that time the jib took such a beating that we had to unbend it and resew a number of seams. Thereafter, until we made our landfall, the jibs stayed down, it not seeming worth while always to carry a jib set for safety's sake, so that the vessel will handle better in case of emergency. Setting a jib is but a moment's work.

The change in the weather which came with the Trades was rather remarkable. For a number of days the sun set behind ugly cloud banks which boded no good. On these evenings we would study the clouds carefully, almost ready to reef. But always the unfaltering wind from astern, the regular slow see-saw of the glass and what we had read about Trade wind weather, forestalled taking in sail. And nothing ever came out of those clouds. We seemed to be forever sailing just behind vile weather. There would be lightning and faint thunder ahead. Black clouds. Sullen water. And day after day we would sail on placidly in sunshine and blue waters.

The frequent shifts of the wind from E.N.E. to E.S.E., then, indicated merely that the Trades had not settled down. We expected them to blow from the northeast, and as long as we had the expectation we jibed ship patiently three or four times a day, thinking each time would be the last. Ultimately, we learned that the good winds never blow from the northeast, at this time of year at any rate. You can count on them quite regularly from the E.N.E., but they will blow often from the E.S.E. Between times they shift around in between, giving one the choice of steering by the wind, with the main boom out against the shrouds, or jibing at too-frequent intervals.

So passed the days, small events assuming great proportions in a universe where nothing existed but the sea, the sky and *Wander Bird's* own little world. The tropic waters were distinctly disappointing to one who has known the South Pacific. In the Atlantic we saw not so much as a shark. There were no porpoises, no bonita. We dragged a trolling spoon for 5,000 miles and never took a prize. Once in a while there would be a burst of flying fish, some of which would come aboard to be eaten or thrown back, as our hunger engaged more or less victoriously with our affection for the fairy-like creatures. There were no birds, no weeds. The ocean was as dead here as that lonely stretch between Iceland and Greenland, but here it was blue and smiling; there it is dark green and sombre.

As we dipped farther and farther south, getting down to 19–20 N., the sun made sleeping below in the main cabin almost impossible. The deckhouse bunks became very popular. Billy and Paul rigged up, with an old sail, a "Sailors' Rest" in the very bows. The boats proved convenient cradles, easily converted to bed use by the installation of mattresses.

At first the rolling due to the following sea was not so bad, or perhaps we did not notice it, being fresh, but as the weeks passed and the motion became more violent we got extremely weary of it. It is almost impossible to believe, lying quietly at anchor and contemplating our bulwarks as I write this, that a month ago we were occasionally rolling solid water over them. But we did. And it seemed that every time we dipped into a big sea the skylight would be open, ready to take it all down on top of us. At times the mainboom would go a third of its length into a sea, putting a heavy strain on our anti-jibing gear.

We took to going aloft regularly looking for chafe, but the chafing gear already up there and the high efficiency of the old pilot boat's leads reduced that terror of the ocean cruiser to a minimum. In our entire voyage, from Hamburg to Miami, we chafed through but a single jib pendant — and that constitutes a record as far as I know. For safety's sake we double-ended our main peak and throat halliards — none of our halliards being equipped with jigs.

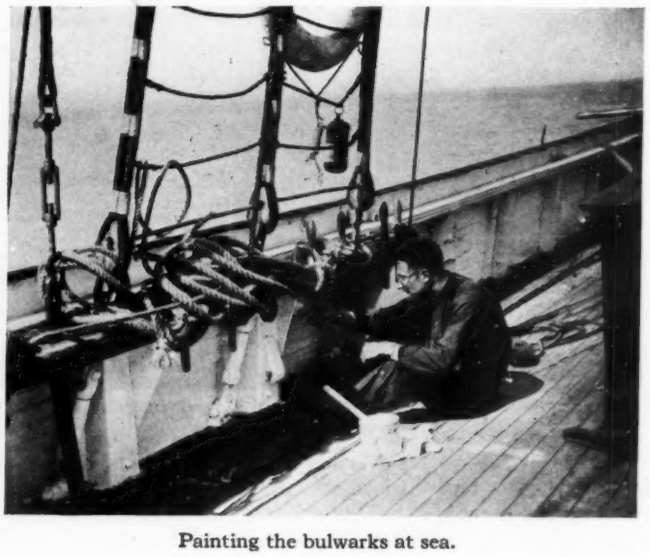
The Trades did not blow as strongly as I had expected or hoped. We soon found that our squaresail was, by itself, not big enough. With a raffee we would have had a square rig capable of giving us eight knots. A topsail set raffee fashion did not seem to help appreciably. To get that speed as it was, we had to carry the full mainsail, and that greatly reduced the efficiency of the squaresail.

On November 12th we overtook an area of low pressure and stayed in it for an unpleasant week. The barometer dropped from its accustomed 30.07 to 29.84 and the regularity of the Trades was broken. Now the wind played all around us, confusing the sea and cutting down our runs from 175 miles a day to 140. Life became a succession of jibes. We got our first genuine tropic rains, floods so heavy they beggar description. One night, while Lorenz' watch was trying to shift sail fast enough to match the shifting winds, our mainsail got caught aback before the boom tackle, which ran from the boom to the main rigging, could be slacked off. The boom broke right at the tackle. I do not know whether it broke because of the tackle being in that position or because of two bad knots we discovered under the surface of the boom just at the break. It was raining so hard, there was such a mess on deck and the wind was so uncertain, that we all turned in, after snugging down, and slept under the white rays of a riding light until morning.

In eight hours we scarphed and fished the boom, shortening it four feet and rebending a single-reefed mainsail. Holding this sail in reserve, out of fear for the boom, we made the run to San Salvador in ten days, averaging 120 miles a day under the squaresail with the storm trysail set across the deck pendant from the main throat halliard block and lashed to the shrouds. It gave us an additional one half knot, experiment proved. There we again set the mainsail for the run to Nassau. On November 26th, 28 days to an hour out of Las Palmas, we were off the capital of the Bahamas.

The run from Nassau to Miami, 190 miles, was completed in 28 hours, and a perfect voyage would have ended perfectly had not a buoy in Government Cut been misplaced. We tried to enter after dark, urged unwisely, perhaps, by the excitement of getting home. After studying the chart carefully, and discovering a whole series of uncharted lights just outside the channel, we headed in. A dark, low

(*Continued on page 116*)



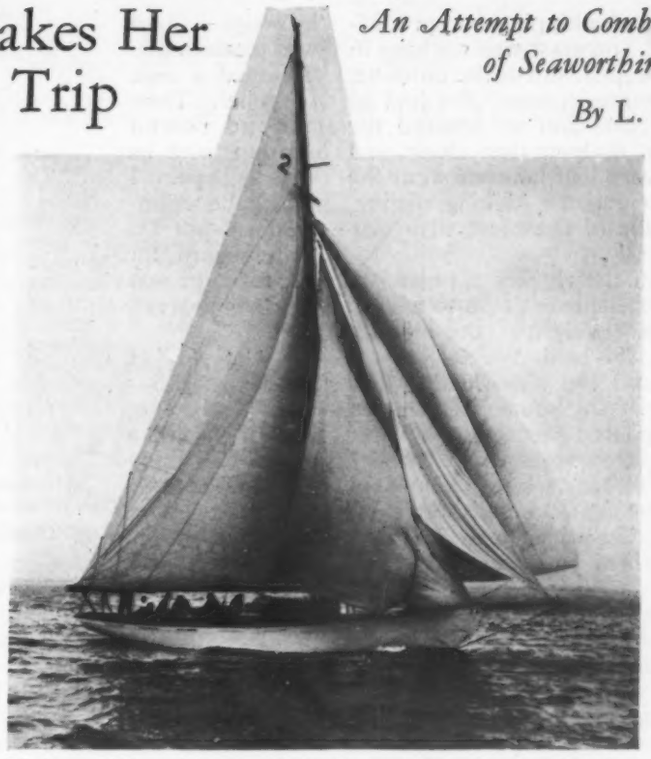
Painting the bulwarks at sea.

Maitenes Makes Her Maiden Trip

An Attempt to Combine the Opposed Virtues of Seaworthiness and Speed

By L. LUARD

MAITENES II was not, as many think, built around the Fastnet Rule. Had this course been pursued a very different type of ship would have been evolved. She was an attempt — and a successful one — to combine the opposed virtues of seaworthiness and speed. Displacing a fraction over 19 tons on a water line of 38 feet, a beam of 12 feet, 1 inch, a draft of nearly 8 feet, and an over all length a shade under 50 feet, she rates as a 25-tonner. But Thames tonnage is no criterion of a ship's size; a premium is placed on beam; and this formula exists, one feels, to beguile the inexperienced yachtsman.



Maitenes II **as she essayed the Fastnet Race for the first time last year.**

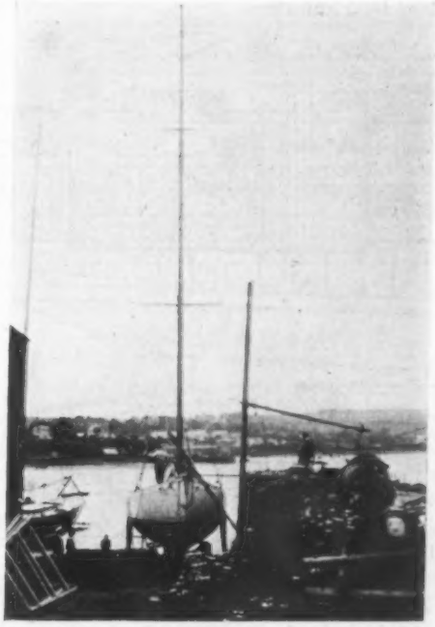
Bermudian rig was chosen — not without any doubts and fears — because she was intended to enter the Fastnet Race, a course that usually imposes a great deal of close-hauled work and, more often than not, a dead beat as far as Land's End. Had she been larger, the Bermudian sail would have given place to gaff mainsail; but though she is rather small as an ocean racer in heavy weather, we believe that, given moderate conditions, she is capable, when fully tuned, of some startling performances.

Her building in a contest against time is another story. Three weeks before the start of the race of 1929 she was lying at Carantec, in France, still waiting for her missing ironwork. Somewhere in Havre the Bo's'n, amid a whirl of hot confusion, was attempting to trace a sack that vanished, it seemed, before his astounded eyes. The days passed. We could wait no longer. Wooden cheeks fitted with rollers were bolted to the mast; the forestay was lashed to the bowsprit; we unearthed a couple of old iron rings, rammed them home, and trusted they would hold the bobstay and bowsprit guys. A distracted builder wrung his hands, gesticulated, became inarticulate, and was soothed with Falernian wine. But we cabled the Bo's'n that we were leaving for fear he would seek us here and find instead, perhaps, violent hands laid upon him.

We beat out of Carantec under trysail and staysail in light airs and against the last of the flood. This showed us that *Maitenes* was a wonderfully easily driven hull. All our racing sails were waiting for us in England except the spinnaker, and this sail we made into a bed for the commodore. Our mattresses, cushions, and settees, were also on the other side. She ghosted seawards — and the tide slacked; she ghosted seawards — and the tide turned; she ghosted seawards and my thoughts, running riot, clashed into a thousand surmises. What would she do and be? Would that lovely sheer deceive and deride? Would she possess obedience to the ways of our hands, fidelity to our every desire, capacity to suffer and to triumph on the life of great waters?

Twilight fell; a white beam flashed intermittently from Isle de Bas; the ebb tide, swirling silently, broke into a rip two cables ahead, and forced us to drop a kedge in order to avoid a long jagged reef.

There were three of us altogether — and the commodore. Jerry, of course, was part of the ship, and Sinbad, a rugged survivor of mast and sail, had been sent along by the Bo's'n, a sailing mate in cruising and ocean racing. He was indignant — naturally so; he was worried — but the worry concentrated in his eye as he glanced aloft, snorted, cleared his throat in a deep rumble, fixed us with a glittering eye, and held his peace. But one guessed what he was thinking. He was seventy. Had three score years of seafaring brought him to this sorry pass — to shipping aboard a packet with a stick half again her length? That morning he had looked to the ax, had made a cunning canvas chair, and we — in our turn — said nothing.



Said Sinbad, "I know a damn fool thing when I see it — and that's your stick."

"Whisper of wind," he muttered in a deep monotone, "and let's hope it won't rise much beyond a whisper."

We weighed, had to anchor again, then finally cleared the island and lay all night rolling in a heavy ground swell. Next morning we were shaping a course for the Lizard in a light easterly breeze that backed and freshened steadily, till we could only lay N.W. by W.

That night it blew hard, rising from fresh to strong, to a moderate gale. A short, broken cross-sea sent us reeling and plunging, with the

avowed intention, it seemed, of whipping our precariously stayed stick out of her. The mast was working in convulsive jerks, and the bowsprit, not to be outdone, whipped and kicked in sickening spasms. We had to hold on to that spar at all costs and we lowered the staysail to ease her motion, dodging her along and nursing her over each sea. Every half hour we went the rounds with a spanner, tightening the kicking rigging, and slithering past the lee side of the mast with desperate urgency.

As fast as we tightened up the rigging appeared to slack, and then the dirge in the shrouds rose to a shrill shriek as if mocking us. But we sighted the loom of Lizard Light, and the mast still held. We sighted the lights of the pilchard fleet and the mast held — held and voiced its protest in terrifying sounds. Down below we were awash. Water poured through uncovered skylights, through loosened mast wedges, drove through the companion hatch, dripped from deck seams; and the commodore, struggling against seasickness, the reek of tarred bolt rope in her nostrils, waged a mute battle with the clock. Sinbad remained on deck. We understood. His eye gleamed wild and the ax lay below. But his dream was of a maniac hacking at wreckage, hacking madly to save the hull. And Jerry, unperturbed as usual, spanner in pocket, nursed the fitful glow of his pipe with studied solicitude.

Dawn rose with the clearing squall, and twelve hours later we dropped anchor in Falmouth — wet, tired, smothered in brine below decks and above, but satisfied and content. Sinbad was also content, though he voiced his disapproval of the ship the next day. But that night he slept ashore, comforted at last by a row of beer bottles that stood watch and ward — like a platoon of dead marines.

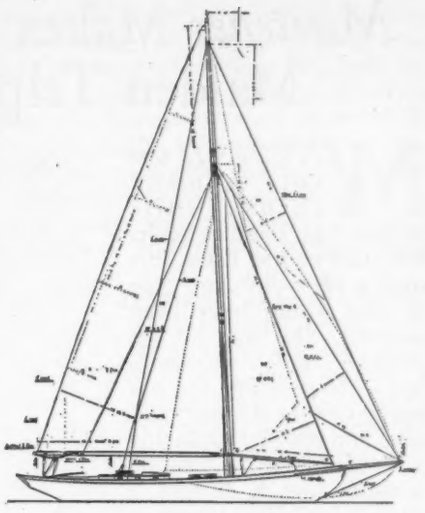
We rowed aboard the next morning, telling the local policeman, as we passed him, that we were the ruffians he had stalked so conscientiously the night before, and that as he had known me for ten years it was time he curbed his zeal. As we closed the ship, we saw a figure seated in the cockpit, hand resting on the helm.

"Customs," said Jerry. "Bet he's been waiting some time. We'll have to placate him." But the customs' officer metamorphosed into the designer; he had summed her up — and was pleased. We breathed a sigh of relief. Then Sinbad rowed off and fixed us with his eye. "I said," he enunciated "that I'd ship aboard for the race, if I was satisfied with her."

"Well —?" I queried.

"Well, I'm not. I know a damn fool thing when I see it — and that's your stick."

"It held."



Original sail plan of *Maitenes II.*

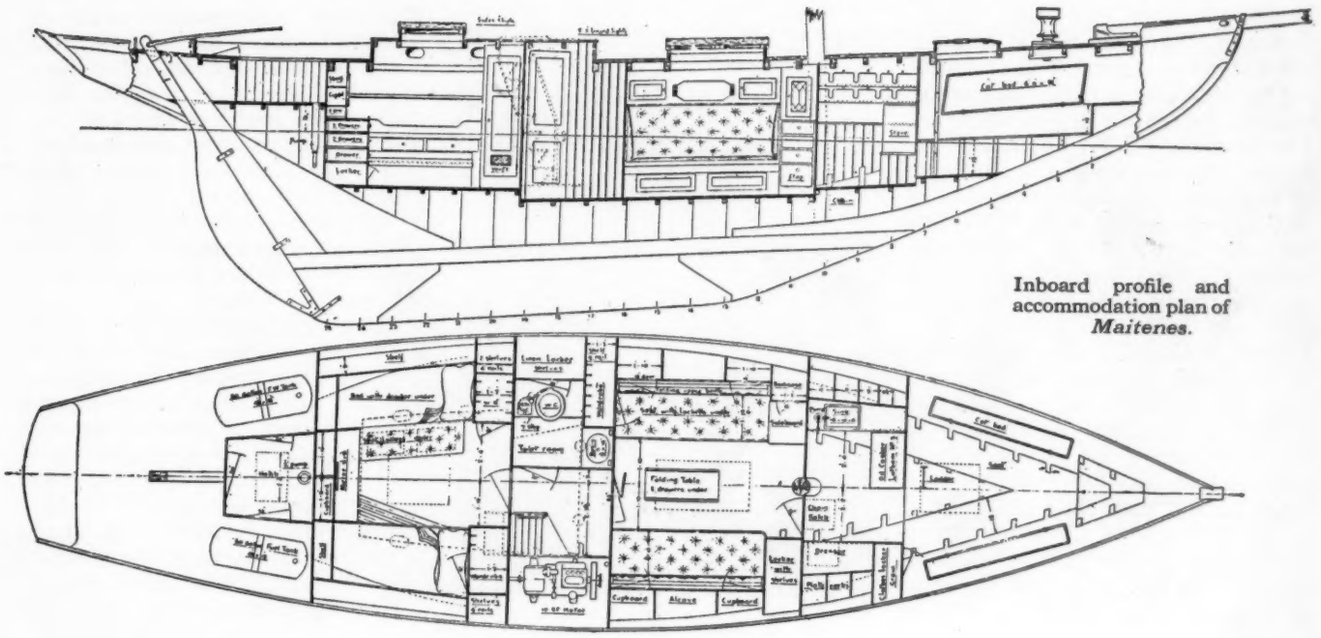
"Held? Lucky for us it did. But nothing'll ever put that right."

"I'm very sorry, but had I known those were your conditions you'd never have been asked."

"Perhaps you're right. I'm too old for the job. I'll get along now." He shook hands all round and slipped into the rowboat alongside. Once he glanced aloft with a benevolent smile, then set his rugged old face sternly towards the shore.

We had now a fortnight to get her ready before we sailed for Cowes, and the days slipped by, one by one, short and fleeting. Our missing ironwork was made and fitted; the ship was scrubbed, planed off, smoothed down, painted, paid up. Fittings were installed, tested, passed, and the crew joined us, one by one, our crew which was nearly always the same — the doctor, close on threescore years; the colonel, straight from Hull having, it appears, motored through the land like a flying fury; Graham, our cook, though in real life a Wing-Commander; the major, a soldier and sailor, too; Kirkpatrick, winner of the Romola Cup the previous year; Barrett,

(*Continued on page 122*)



Inboard profile and accommodation plan of *Maitenes.*

How to Build a 26-Foot Sloop

Part II — The General Method of Construction

By JOSEPH J. REINHARDT

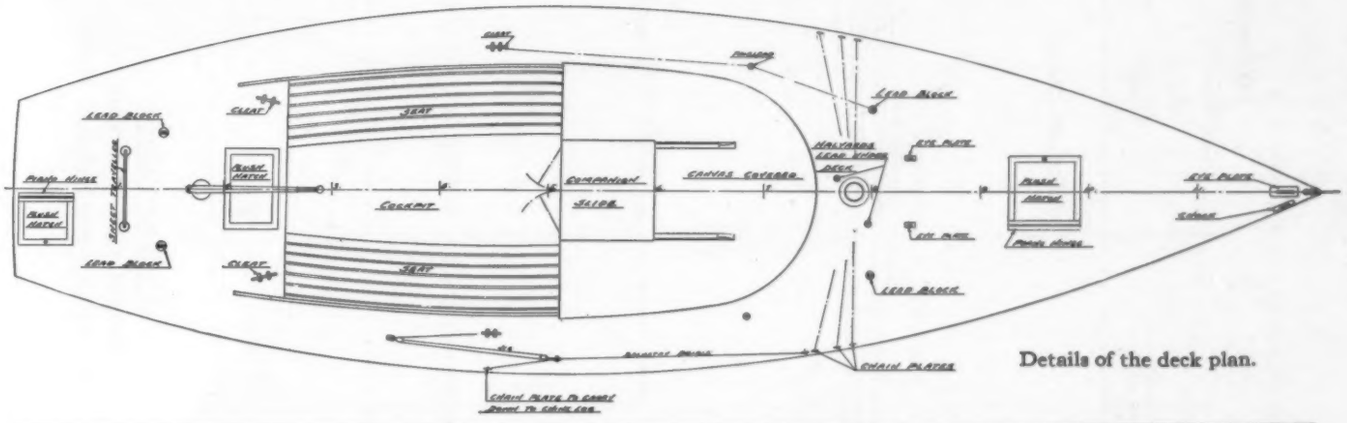
[In the following article the author's aim is to show the general method of building this skipjack model, and the procedure to be followed, so that anyone with previous experience or already familiar with boat building practice can do the work himself, or with the aid of a professional boat builder. The article does not attempt to tell the novice how to put this boat together. For, in the first place, a boat of this size is a bit too ambitious for one to tackle who has had no previous experience, and to go into minute detail on every point of construction would be beyond the scope of this article, and the space allotted to it. If one wants this elementary work on building a boat we would recommend the book *Small Boat Building*, by H. W. Patterson. Ed.]

IN the last issue we discussed briefly the boat in general and showed the drawings necessary to begin the work.

From the table of offsets the lines should be laid down on a smooth floor, full size, and faired with a wooden batten. This part of the work being of considerable importance, it might be desirable to call upon a boat builder if one has had no previous experience or is at all uncertain of successfully completing the job. From these lines the construction molds may be made after deducting ¾" all around for the thickness of the planking. These molds may be made of any rough lumber at hand as they will be removed at a later stage in the construction.

The flat wooden keel is next cut to shape, as shown in the plans, and rabbeted, after which it is set upon blocks of the proper height to give it the correct curvature. It is necessary to set the keel blocks upon a level surface so that this surface may be used as a plane of reference and all measurements may be made from it.

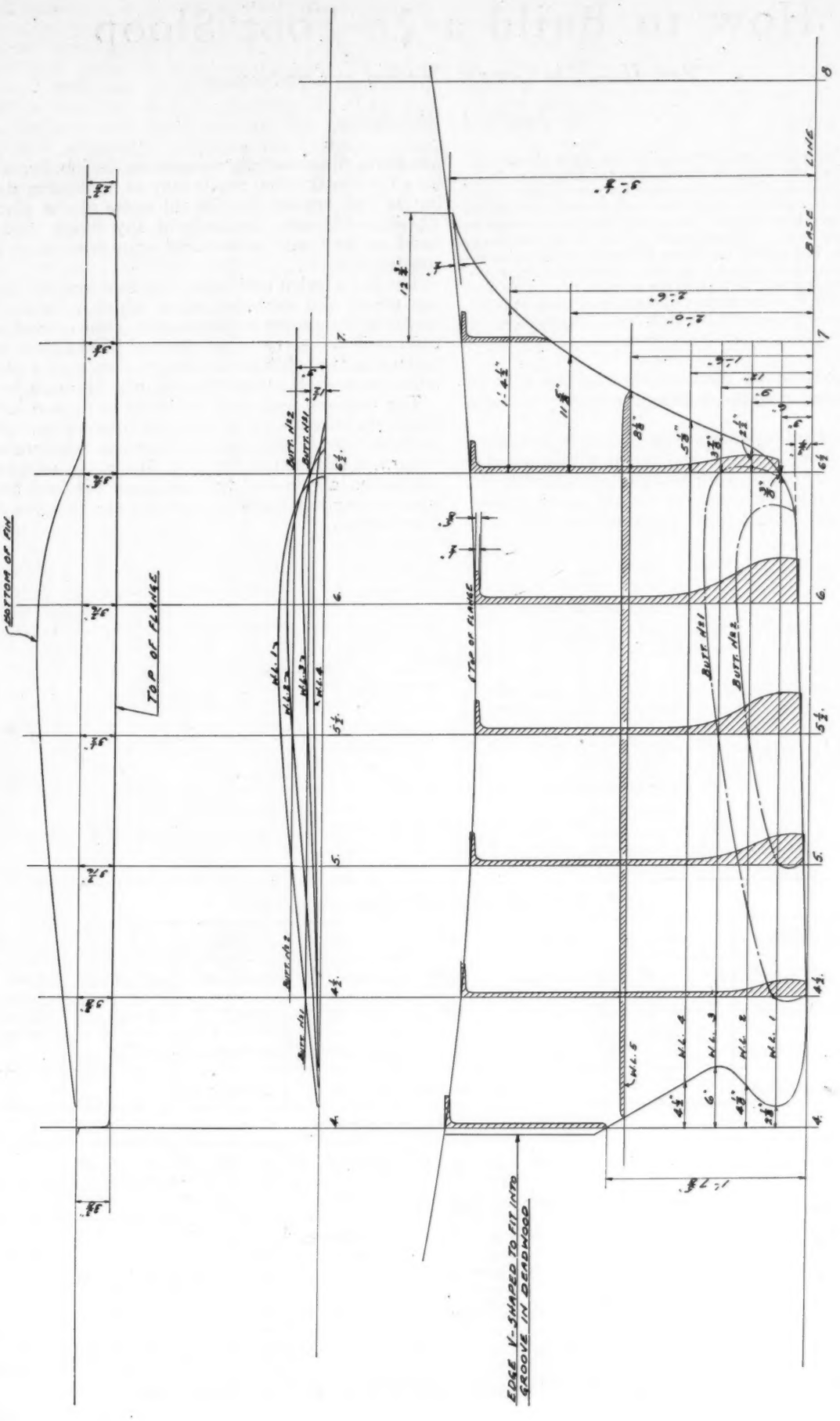
The transom and stem are next made and are permanently fastened to the keel, the stem being riveted to the keel directly and the transom to an oak knee which, in turn, is fastened to the keel. The construction molds mentioned above are then set upon the keel and the whole is securely braced to prevent any twisting during construction.



Details of the deck plan.

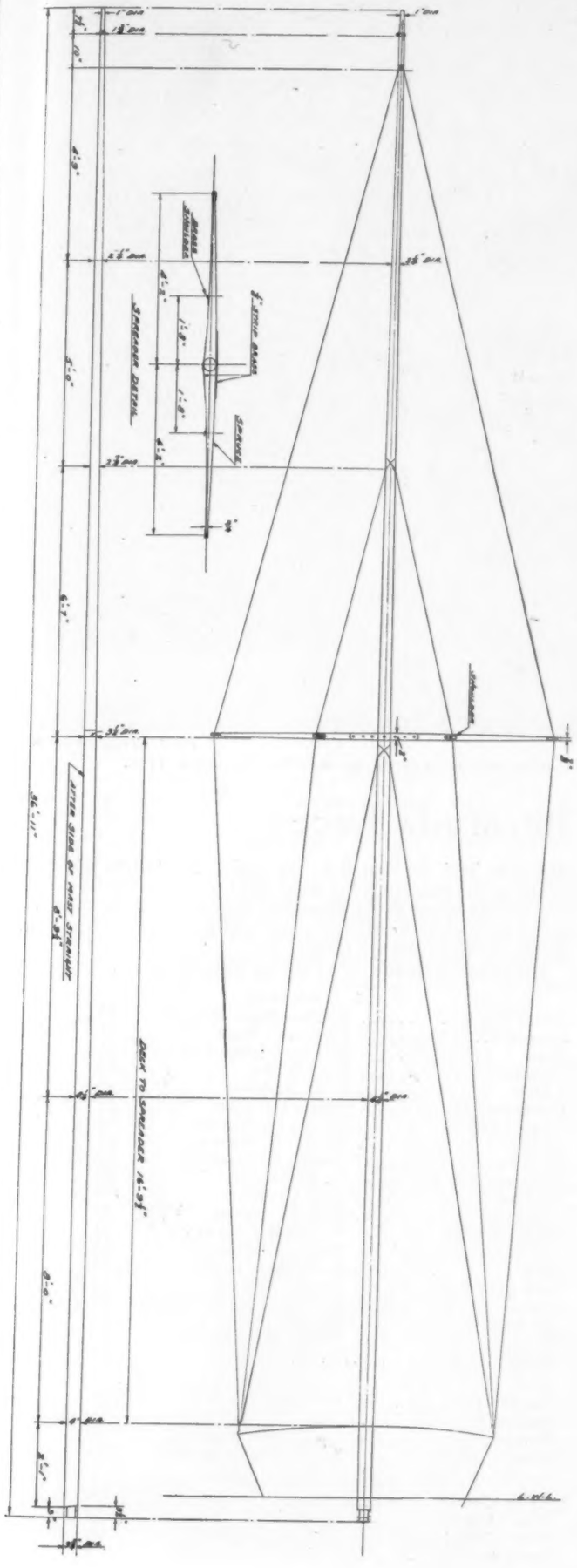
HEIGHTS ABOVE BASE LINE							
STATION No.	4.	4½	5.	5½	6	6½	7
BOTTOM OF FIN	1-7-5	0-0-0	ST. LINE		0-1-2	0-3-2	2-1-6
TOP OF FLANGE	2-11-6	2-10-1	2-9-3	2-9-0	2-9-2	2-9-6	2-10-6
BUTTOCK No 1		0-3-3	0-6-7	0-9-0+	0-10-4-	0-9-0+	
BUTTOCK No 2			0-2-6	0-6-1	0-6-3		
HALF BREADTHS							
BOTTOM OF FIN		0-1-4-	0-2-7+	0-4-0	0-4-3	0-1-2	
W.L. No 1		0-1-4	0-3-0-	0-4-1+	0-4-4		
W.L. No 2		0-0-6	0-1-7	0-3-0+	0-3-6	0-1-6	
W.L. No 3		0-0-3	0-0-7	0-1-4-	0-2-1	0-1-4	
W.L. No 4		0-0-3	0-0-5	0-0-7	0-1-1	0-0-7	
W.L. No 5		0-0-3½	0-0-4	0-0-5	0-0-5½	0-0-5½	

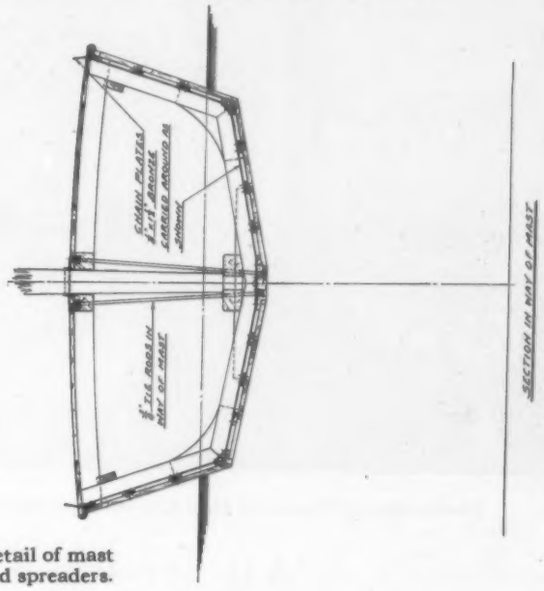
OFFSETS GIVEN IN FEET, INCHES & EIGHTHS.



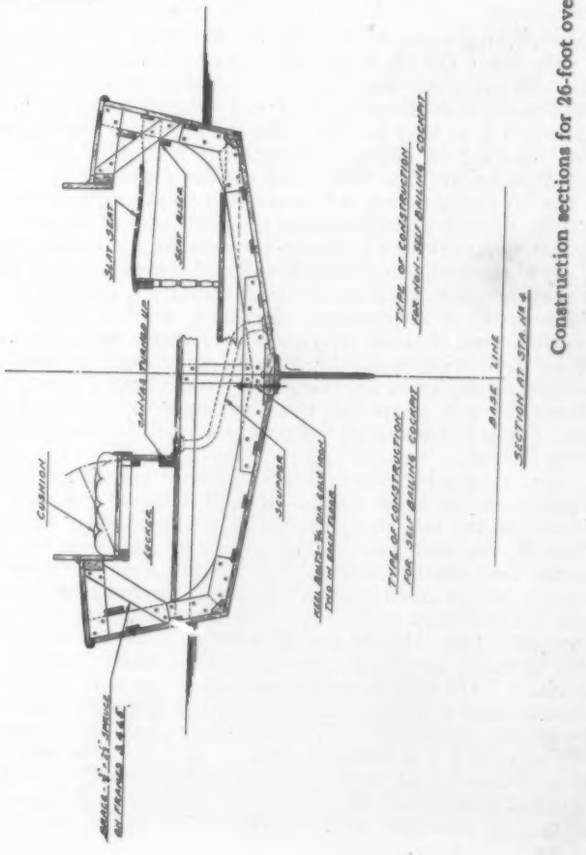
Fin keel for 26-foot "skipjack" model.

If the watertight bulkheads are desired, it is advisable to set them in place at this stage of the work and use them as molds, as it will then be possible to get a tighter joint in way of the chine logs, which should now be put in. The frames are next put in place, the side and bottom members being joined by means of oak knees riveted to both members. The floors connecting the port and starboard frame members go in next and are riveted to both keel and frame. Intermediate floors should be put in in way of the iron keel and the mast step. These are shown on the construction plan. After notching the frames and floors, the ½″ by 2″ seam battens, mentioned in the first part of this article, may be put in place. (*Continued on page 136*)





Detail of mast and spreaders.



Construction sections for 26-foot over all sloop.

Photo by Frederick Bradley

The fog-bound Thames at New London, with the Bermuda fleet waiting to get under way for the race of 1928.

All Set For the Bermuda Race

IN something over a month after this is written, on June 22nd, to be exact, the finest fleet that has ever sailed in a Bermuda Race will get under way from New London, bound across the Gulf Stream to the little patch of land lying 660 miles out in the Atlantic. Up to May 1st, the Race Committee of the Cruising Club reported 28 entries. Undoubtedly a number more will be sent in before June 10th, when the lists close.

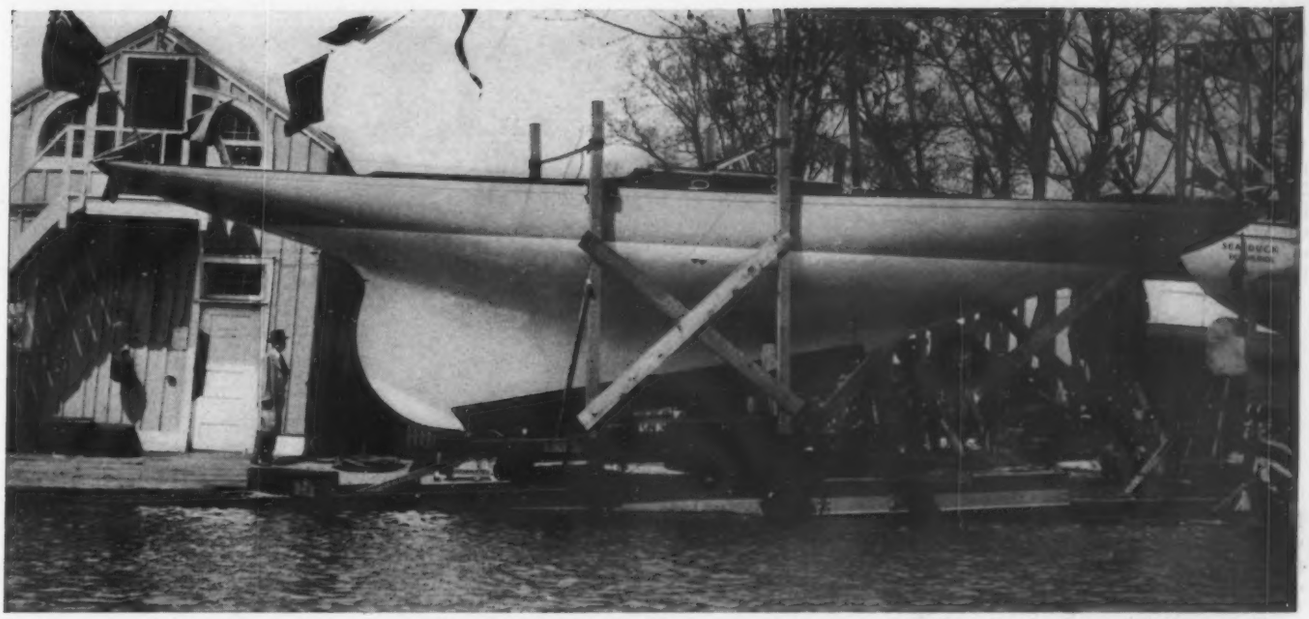
The list shows twenty schooners, four yawls and four cutters entered, which is an indication of the popularity of the schooner rig among American yachtsmen for cruising and ocean racing. Many of these will carry the staysail rig between fore and main, so that there should be plenty of opportunity to add fuel to the enlightening, if acrimonious, discussion on this subject. No less than nine of those entered are new boats, built this year, all of them with the rating rule in mind, and at least five definitely designed to the rule, so we should have a pretty good chance this year to see just how this rule works in actual practice. The performance of the new boats will be watched with great interest.

With such a high class fleet it is a hard matter to pick the winners in the two classes. Russell Grinnell's *Rugosa II*, winner of the last race, and R. W. Ferris' *Malay*, winner in Class B, are both starters this year and may turn the trick again. Two smaller editions of *Niña*, the *Rose of Sharon* and *Cayuse*, will be sailed hard to win, while George Roosevelt has a new boat designed by Sherman Hoyt that he is sure will "come through." John Alden's new *Malabar X*, while a normal boat, will be sailed hard every foot of the way, while *Teregram* and *Malabar VIII* both have new and larger rigs with which their owners hope to put them up among the leaders at the finish. So it's anyone's choice. We refrain from predictions this year.

Everyone is regretting the absence of *Niña* from this year's race. This fine craft ought to be entered, and the race will lose much of its interest without her. Her owner, Paul Hammond, is tied up this year with America's Cup affairs, but he had offered to lend the boat if a crew could be found to take her. Owing to the position of her mast, she cannot qualify under the rule for the schooner rig allowance, and her designer feels she would be unduly handicapped by taking full rating for time allowance. But rules are rules.

The following is the list of entries up to May 1st.

SCHOONERS			
Lion's Whelp	Phineas Shaw Sprague	72	A
Sayonara	Vernon F. West	67	"
Fame	E. Floyd Jones *et al*	66	"
Shimmo	John White	65	"
Curlew	C. L. Andrews	65	"
Quicksilver II	Albert E. Peirce	65	"
Yankee Girl II	Dr. G. W. Warren	64	"
Dauntless	Horace B. Merwin	61	"
Mistress	George E. Roosevelt	60.9	"
Teregram	G. W. Mixter	59	"
Malabar X	John G. Alden	58	"
Monomoy	Henry Lockhart	57	"
Malabar VIII	W. Findlay Downs	54	"
Fearless	Ralph B. Williams	53.9	"
Teal	R. Graham Biglow	53	"
Rose of Sharon	Austin Lamont	52.7	B
Cayuse	Garrison and K. Norton	52.7	"
Black Goose	Everett Morse, Jr.	50	"
Buccaneer	Powers & Hendricks	50	"
Malay	R. W. Ferris	45	"
YAWLS			
Rugosa II	Russell Grinnell	59	A
Daphne	Roger H. Williams	55	"
Dorade	Olin J. Stephens, II	52.2	B
Janet	W. H. Hamilton, Jr.	50	"
CUTTERS AND SLOOPS			
Flying Cloud	Frank B. Draper	59	A
(New Cutter)	Frederick J. Wells	50	B
(New Cutter)	Hobart Ford *et al*	47	"
Duckling	Charles W. Atwater	37	"



Norseman, one of Canada's aspirants for the Canada's Cup, just before she went overboard from the Royal Canadian Yacht Club's shop, where she was built. She was designed by W. J. Roué.

The Month in Yachting

The Transpacific Races

PACIFIC COAST sailors will start the 4,700-mile ocean race to Tahiti from Santa Barbara on June 10th and the biennial Honolulu Race from Long Beach on July 4th. All details incident to the long-distance events were to have been worked out at a recent meeting of the Transpacific Yacht Club, but discussion over the new 2,000-mile Honolulu time allowance became so torrid that only the location and dates of the two starts were decided.

In mid-May only five entries for each race had been received. Those signed for Honolulu included Admiral Clem Stose's 58-foot yawl *Teva*, winner of the 1928 race, from the San Diego Yacht Club; Rear Commodore Morgan Adam's 136-foot schooner *Enchantress*, and H. W. Rohl's 68-foot sloop *Pandora*, both to fly the burgee of the Los Angeles Yacht Club; Lazard Lippmann's 102-foot sloop *Talayha*, ex-*Athene*, which led the fleet to Hawaii in 1928, this year to fly the colors of the new Long Beach Yacht Club; and Walter Horne's 110-foot yawl *Contender*, ex-*Poinsettia*, to fly the burgee and commodore's flag of the Long Beach Pacific Coast Yacht Club.

Only one Southern California yacht was entered for the Tahiti Race. She was the 55-foot schooner *Aafje*, owned by Dwight Faulding, of the Santa Barbara Yacht Club. Other entries, all from San Francisco, included Mark Fontana's 78-foot ketch *Shawnee*, of the Corinthian Yacht Club; Dr. Clarence Parker's 59-foot schooner *Idalia*, from the San Francisco Yacht Club; and Templeton Crocker's recently-commissioned 118-foot schooner *Zaca* and S. F. B. Morse's 96-foot schooner *Temptress*, both of the St. Francis Yacht Club.

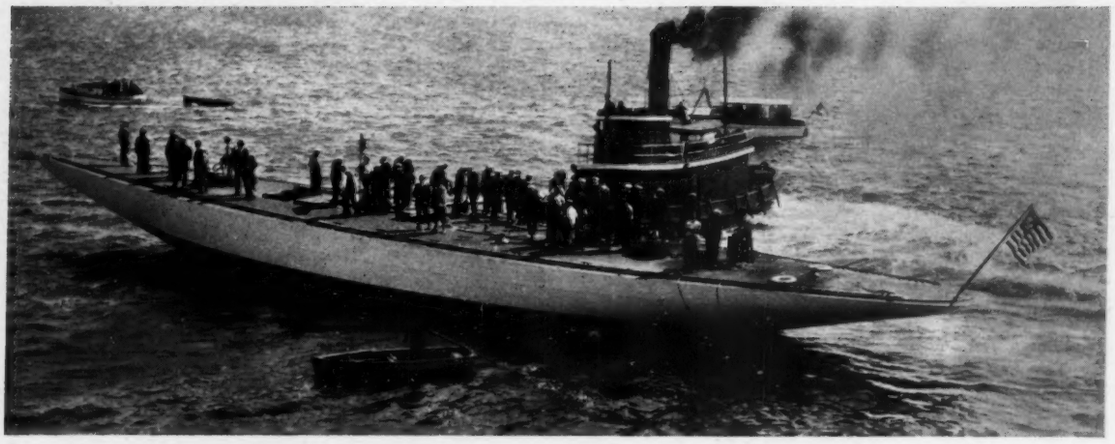
A sizeable row developed over the change in the time allowance, which Ellis Taylor and Milt Hesselberger, of the rating

Photo by M. Rosenfeld

Conewago (left), one of the Rochester Yacht Club candidates for Canada's Cup defence, under sail before she left for Lake Ontario. She is from designs by Sparkman & Stephens, and was built at City Island by Robert Jacob.

Comet, a new Six-Metre for Lake Michigan. Also from designs by Sparkman & Stephens, she was built by Nevins for John P. Wilson, of Chicago. She will be raced on the Sound the early part of the season.

Photo by E. Levick



***Yankee*, the Paine-designed Cup yacht for a Boston syndicate, was the last of the four aspirants to go overboard.**

committee, have computed for a race of 2,000 miles. They explained their action by admitting that while the great circle distance to Honolulu is 2,225 miles, time allowance tables are presumably prepared with a triangular course in mind. Thus, over a triangular course, a yacht's actual distance is increased fully one-third by reason of windward work, while the Honolulu Race is almost entirely a run. Taylor and Hesselberger maintained that time allowance for a race of 2,225 miles would work a great hardship on large entries, forcing them to give away the same time to small yachts for a following breeze race as though the race were a beat, a reach and a run. Sentiment among owners of all save the largest boats has developed against this ruling, it being pointed out that after 2,000 miles have been sailed the small boat will, in effect, be forced to race the big 100-footer the remaining 500 miles, boat-for-boat.

England and Canada Challenge for Star Class Internationals

THE Quebec Fleet, of Eastern Canada, and the Solent Fleet, of England, in the order named, were the first to challenge for the 1930 Star Class International Championship, to be sailed for on the Chesapeake, September 25th to October 2nd. It is the first time that either of these fleets have challenged, and the first time that a European "Star" has entered the annual event.

One, or possibly two, more entries are expected from France, where six Star fleets have recently been developed. Orders were recently placed for a group of new Stars at Lisbon, Portugal, and an application for charter has been signed and forwarded to the I. S. C. Y. R. A. Interest has spread from France to Portugal and from there to Spain, where there are also several fleets in prospect. Possibly, the 1932 Olympics, in which the Star Class is sure to be included, may be responsible for the widespread interest Europe has shown in this class within the past six months.

A challenger from the Philippines is already on the way to the U. S. A. to compete at Gibson Island next fall. With France, England, Eastern Canada and British Columbia, Cuba, Hawaii, Barbados, and the U. S. A., the Internationals will be international indeed this year and will probably establish a new record with regard to the number of entries. It is estimated that between 25 and 30 fleets will be represented. If this pace continues the series will have to be run off in heats by 1931.

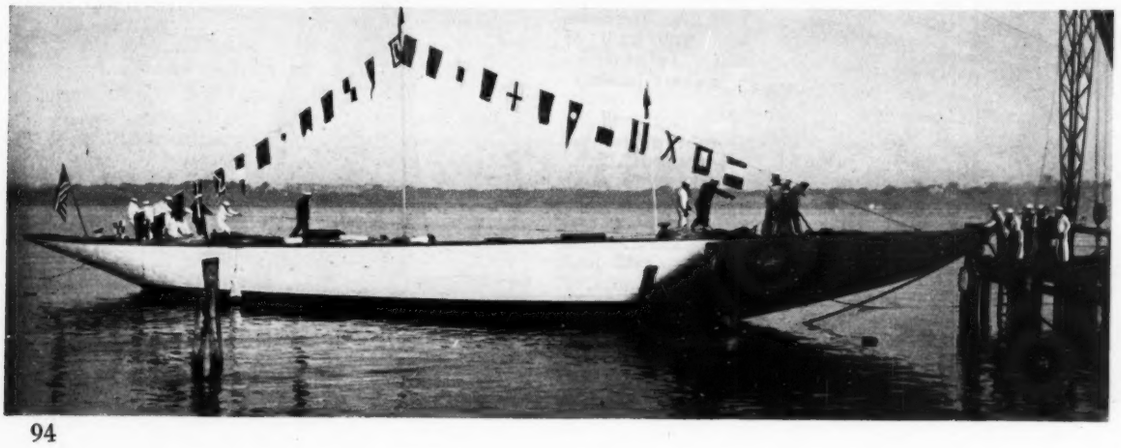
The 49th fleet, Lake Ontario, was granted its charter in May. This fleet replaces the old Ontario Fleet which lost its charter last year, having fallen below the required minimum membership. The Star Class Association today has 753 yachts.

Activity on San Diego Bay

THREE major port development projects to provide facilities for yachtsmen, programs of unusual activity by the three local yacht clubs, and an active awakening of boatyard work are occupying the attention of yachtsmen of San Diego, where there are indications of a coming season of outstanding interest.

Tentative seasonal programs of the San Diego Yacht Club, the Southwestern Yacht Club and the Mission Bay Yacht Club call for week-end activities, plus holiday and regatta week programs, which will keep the ball rolling from May until well into the autumn months. While all-year yachting is California's boast, the winter months, generally characterized by light and variable winds (except when a southeaster moves in and adds a touch of high life) are months of relative inactivity. Except for the New Year's and Washington's Birthday races, San Diego Bay is without much racing from the end of September until April or May, when the season gets under way at full swing.

Nearly a score of races on San Diego Bay are scheduled by the San Diego Yacht Club, and the Southwestern Yacht Club, whose program has not been completed, has definitely listed half a dozen more. The Mission Bay Yacht Club, youngest of the organizations, is proving itself a lusty infant by scheduling no less than 22 race days on its home waters, just north of San Diego Bay, and nine days of racing on other bays and lakes. The three clubs are sharply divided in their activities; the San Diego Yacht Club leans to racing in the Star, "R," and cruising classes of sailing vessels; the Southwestern Yacht Club goes in heavily for power cruiser and "Starlet" races, while Mission



***Weetamoe* finally took the water May 10th, after refusing to slide down the ways on the first attempt to launch her. She has a beautifully turned hull, the work of Clinton H. Crane. She is for the Nichols-Morgan Syndicate.**

Photo by A. C. Church

***Whirlwind,* second America's Cup aspirant to take the water, going overboard from the Lawley plant. Designed by L. Francis Herreshoff, she is for the Thorne-Hammond Syndicate.**

Bay is the stamping-ground of the skimmer, the "Flapper" and handicap class of sailor, and the outboard motorboat enthusiasts.

Awakening after a period of years when no sailing yachts of any great size were built on San Diego Bay, two yards are now working on craft of some interest. One job is an 80-foot ketch, designed by Edson B. Schock, the largest sailing yacht ever built in San Diego, and the other is the proposed Pacific Coast One-Design Class, the first of which has been on the bay at San Diego for some weeks.

The one-designer was turned out at George Kettenburg's yard, from his own designs. She is 32 feet over all, 21 feet on the water line, with a beam of 5 feet 8 inches at the water line, and 6 feet 8 inches on deck. Sail area is 350 feet, and in races held so far, she has given an excellent account of herself.

A yacht harbor in the lee of Point Loma has been, for some years, a part of the key-plan for the development of the Port of San Diego. Now a certain amount of shoaling in the vicinity of the San Diego Yacht Club's present Point Loma anchorage has spurred action, and promises of the hastening of this development have been offered. Meanwhile the club, to provide for immediate needs, is negotiating for a lease at Fort Rosecrans, which will give a deep, clean anchorage of absolute safety, only five minutes' sailing from the open sea.

Coronado, across the bay from San Diego, has also felt the yachting urge, and the planning commission of that city has evolved a plan for the dredging of Glorietta Bay, a landlocked arm of San Diego Bay, offering clean water with complete protection. Plans for financing this work are now under discussion.

The Coming Season in Chicago

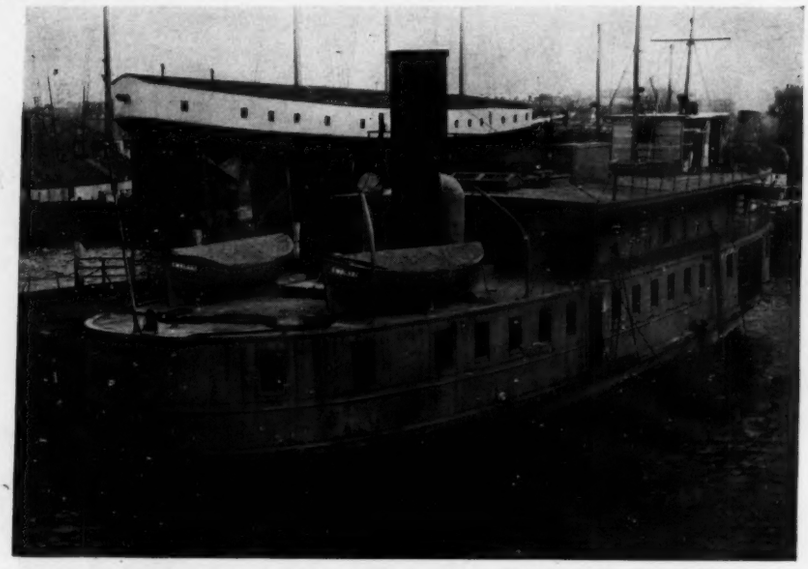
IT is safe to say that a large quantity of water will pass under the keels of several boats owned by Chicagoans this season. Mr. H. H. Horton, of the Jackson Park Yacht Club, is having a new auxiliary built on the West Coast from designs by Edson Schock and plans to represent that club in the Honolulu Race this year. It is expected that she will be finished in ample time to compete and she should do well in that event.

Another globe trotter will be added to the list when the Watts-designed *Swordfish* takes to the water again this spring. She has been purchased by two Chicagoans who will set sail immediately on the long traverse. The trip is to be made in easy stages *via* the Great Lakes and the New York State Barge Canal, thence to winter quarters at Miami. From there, most probably, she will head for the Panama Canal and thence to the South Seas.

Up at Manitowoc, the Burger Boat Company is completing a handsome addition to the ever-increasing fleet of modern yachts on the Great Lakes. She will be christened the *Lotowanna III* and is owned by Ralph T. Friedmann, of Milwaukee. From plans by Cox and Stevens, she is an able vessel suitable for extended Great Lakes or coastwise cruising. Her over all length is 84′ 5″, l.w.l. 83′ 0″, beam 15′ 0″, and draft of 5′ 2″.

The 1930 Mackinac Race has drawn an Eastern contender in the 60-foot Marconi rigged yawl *Scarab*, of Herreshoff design, owned by Mr. George Pulver, of Gibson Island. She will have on

***Whirlwind,* just before she started down the ways.**



***Emblane*, tender for the America's Cup candidate *Weetamoe*. She will house the yacht's crew and afterguard, having been fully reconditioned for that service by the Todd Shipyards Corporation, Brooklyn. She was formerly used by the government for testing torpedoes.**

board Henry Shuefeld of Washington, D. C., who is a member of the Milwaukee Yacht Club. The inference is that she will sail under this club's colors for the race. Skippers are indulging in quite a bit of discussion as to her chances. The impression from a study of her lines and rig is that she should be well suited to these waters and will find the going to her liking.

Mr. Donald Ross, of Benton Harbor, is having a new cutter built from P. L. Rhodes' designs. She will be similar to the *Awa*, recently described in YACHTING, but the interior layout has changed somewhat. A small auxiliary will provide enough power to move her anywhere.

Chicago has a well-rounded racing schedule of open races this year as will be seen by the tabulation below.

June	21	— Chicago-Michigan City Cruising Race. All classes. Columbia Y. C.
	27, 28, 29	— Virginia Q Class Trophy. Chicago Y. C.
	28	— Hamilton Club Regatta. All classes. Chicago Y. C.
July	3	— Chicago-Milwaukee Cruising Race. All classes. Chicago Y. C.
	5	— L. M. Y. A. Regatta off Milwaukee Y. C.
	5 or 6	— Milwaukee-Chicago Cruising Race. All classes. Chicago Y. C.
	12	— Chicago-Saugatuck Cruising Race. All classes. Jackson Park Y. C.
	12	— Milwaukee-Saugatuck Cruising Race. All classes. Milwaukee Y. C.
	18	— Saugatuck-White Lake Cruising Race. All classes. White Lake Y. C.
	19	— Annual White Lake Regatta. All classes. White Lake Y. C.
	19	— Annual Chicago-Mackinac Race. Chicago Y. C. Cruising and Racing Divisions.
	25	— Milwaukee-Sturgeon Bay Race. All classes. Milwaukee Y. C.
	26	— Sturgeon Bay Regatta. All classes. Sturgeon Bay Y. C.
August	23	— Columbia Y. C. Regatta. All classes.
Sept.	27	— Autumn Regatta. All classes. Chicago Y. C.

The Lipton Cup races for the Class R championship and the Sir John Nutting Cup races for the Eagle Class championship will be held off the Chicago Y. C., August 14–16. The Lutz Trophy series for the championship of Class Q will be held as usual off the Jackson Park Y. C., on September 5–7. September will also see the hard-fought Richardson Trophy series, emblematic of the Class R championship of the Great Lakes, taking place off the Chicago Y. C. on the 10th, 11th, and 12th. The date for the Great Lakes Star Class championship, held by the Sheridan Shore Yacht Club, is not known as yet but it is presumed they will be held about the same time as the Richardson races.

Nathaniel Franklin Emmons

ON May 3rd, Nathaniel Franklin Emmons died at his home in Hingham, in his 45th year. Of New England seafaring ancestry, his love for salt water was an inheritance which, not only fortunately for himself but for the good of yachting as well, he was able to gratify from his boyhood days at Falmouth. There he sailed with his brother "Bob," who later was to win fame with the *Avenger* and who so ably managed the *Resolute*, and with his other brother, William, who survives him. He rowed both at Groton and at Harvard whence he was graduated with the class of 1907.

With the Herreshoff 21-footer *Radiant*, he won many races in the Interclub Association during the years 1913–'16, and in 1915 he carried off the championship in the Second Rating Class of the Y. R. U. of Massachusetts. The *Radiant* was a heavy weather boat, always winning by miles in a blow, and, characteristically, he cut off her reef points, saying that if he couldn't lug sail, none of the rest of the crowd dared leave their moorings.

To his lasting regret, he was unable to join the navy for service during the war, due to defective sight, but he did his bit during these years, at the Fore River Plant, in Quincy.

At one time he owned the *Theresa White*, an able schooner of 30 tons which lately has been used as a training ship for Sea Scouts. In 1925, he had the well known Hoogarts *Filalou* brought over from Holland, in which he has since made many short cruises in the waters south of the Cape.

But Emmons' interest in the sea was even broader. With a connoisseur's flair, he could ferret out old ship models in the most unlikely places, and among his finds were many which proved to be of museum caliber. He also collected books of the

The late Nathaniel F. Emmons.

sea, largely first editions, together with etchings, prints and paintings, and before his untimely death he was already recognized as an authority in these matters, both here and in Europe. For many years he was Secretary of the Marine Museum at the Old State House where one often found him on any day when he happened to be in Boston. He was a member of the Cruising Club, and the Hingham and Beverly Yacht Clubs.

To sail with him, or to travel with him on land, was a continued delight which many of us shall never forget, for his interests were both wide and human.

F. A. FENGER.

A 17-foot boat in which one Nick Ganapolis has started from Miami, for Greece.

The *Roald Amundsen*, modeled after the Viking ships, which arrived recently at Miami from Norway.

When Greek Meets Viking in Miami

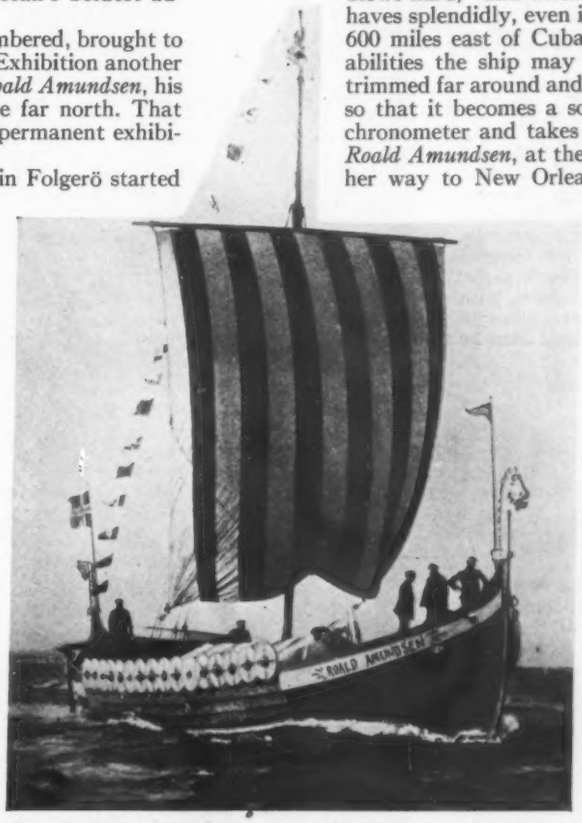
THE waterfront crowds of Miami in April were treated to sights unusual even along that interesting beach when a Greek, Captain Nick Ganapolis, skipper of a 17-foot cutter, met Captain Gerhard Folgerö, commander of the 60-foot Viking ship *Roald Amundsen*.

The *Roald Amundsen*, built on exactly the same lines as a Viking model in Reykjavick, Iceland, dating 1302, arrived in Miami from Norway and Continental ports and Havana after a trip noted more for its discomforts, according to tales of the crew, than anything else. What awaits her when she tries to make the east to west passage around Cape Horn, equipped with her single small squaresail and a 10-horsepower auxiliary, would daunt most of the ocean's boldest adventurers.

Captain Folgerö, it will be remembered, brought to the Philadelphia Sesquicentennial Exhibition another Viking model half the size of the *Roald Amundsen*, his track that time having lain to the far north. That ship, the *Lief Ericcson*, is now on permanent exhibition in Duluth.

On his return to Norway Captain Folgerö started the construction of the *Roald Amundsen*, personally superintending every detail, from the cutting of the tall pines on the northernmost mountain range of his country to the placing of the highly decorative dragon heads on the high stem and stern posts. The ship is 60 feet over all, with a straight keel 50 feet long. Her maximum beam is 15 feet 6 inches and her draft 3 feet 6 inches.

Although departing from his model enough to install an auxiliary, the doughty Captain failed to put in a watertight deck, so that all the water which came aboard swept precipitately into the bilges. From the "hurricanes" which the skipper claims to have weathered in all latitudes and seasons, it is evident that the *Roald Amundsen* had at least plenty of hard weather and that constant activity at the pumps was necessary to keep her afloat. At one time, Folgerö declares, the ship was literally half full of water and all of his clothes were ruined, so it was left to the generous citizens of Havana to present him with a presentable coat when he reached Cuba.



The *Roald Amundsen*, which departs from Viking tradition in that she carries an auxiliary motor, is 60 feet long over all, 15.5 feet beam, and draws 3.5 feet of water.

The *Roald Amundsen* left Norway July 21st, 1929, and thereafter visited Sweden, Denmark, Germany, England and France, through which latter country she passed *via* canals, going through 247 locks and under 490 bridges. The latter had been prepared for by stepping the mast in a tabernacle. Barcelona, Algiers, Seville and Palos, Spain, were visited and from the last port the ship sailed for Havana, outward bound on a passage which lasted from February 8th to April 4th.

According to Captain Folgerö, he can so trim his squaresail that his ship will sail within four points of the wind "if it blows hard," and when riding to her big sea anchor she behaves splendidly, even in a March "hurricane" encountered 600 miles east of Cuba. The secret of whatever windward abilities the ship may have is that the squaresail can be trimmed far around and its tack made fast to a boom or sprit so that it becomes a sort of lateen sail. Folgerö carries no chronometer and takes great pride in working lunars. The *Roald Amundsen*, at the moment this is read, is probably on her way to New Orleans from where she will be headed towards South America on her way around Cape Stiff.

While the Norseman is making his arduous way west the Greek skipper of the *Ulysses* will be battling to Athens in his 17-foot sloop. *Ulysses* has a stubby pole mast and her rigging is beyond reproach if a decided shortness of sail is admitted. Her beam is five feet and her draft four feet six inches. It is hard to see just what would harm her in an open sea.

On all such voyages the weakest factor is the human one, and most of the sage opinion along the waterfront is concerned more with the amount of punishment Ganapolis can absorb rather than with the strength of his boat.

The cockpit in *Ulysses* is just wide enough for her skipper to sit in one position, facing forward, holding tiller lines. When he tires of this he has the choice of lying flat on a tiny deck or squirming through the single hatch into his cabin in which he cannot even sit erect. The last performance was

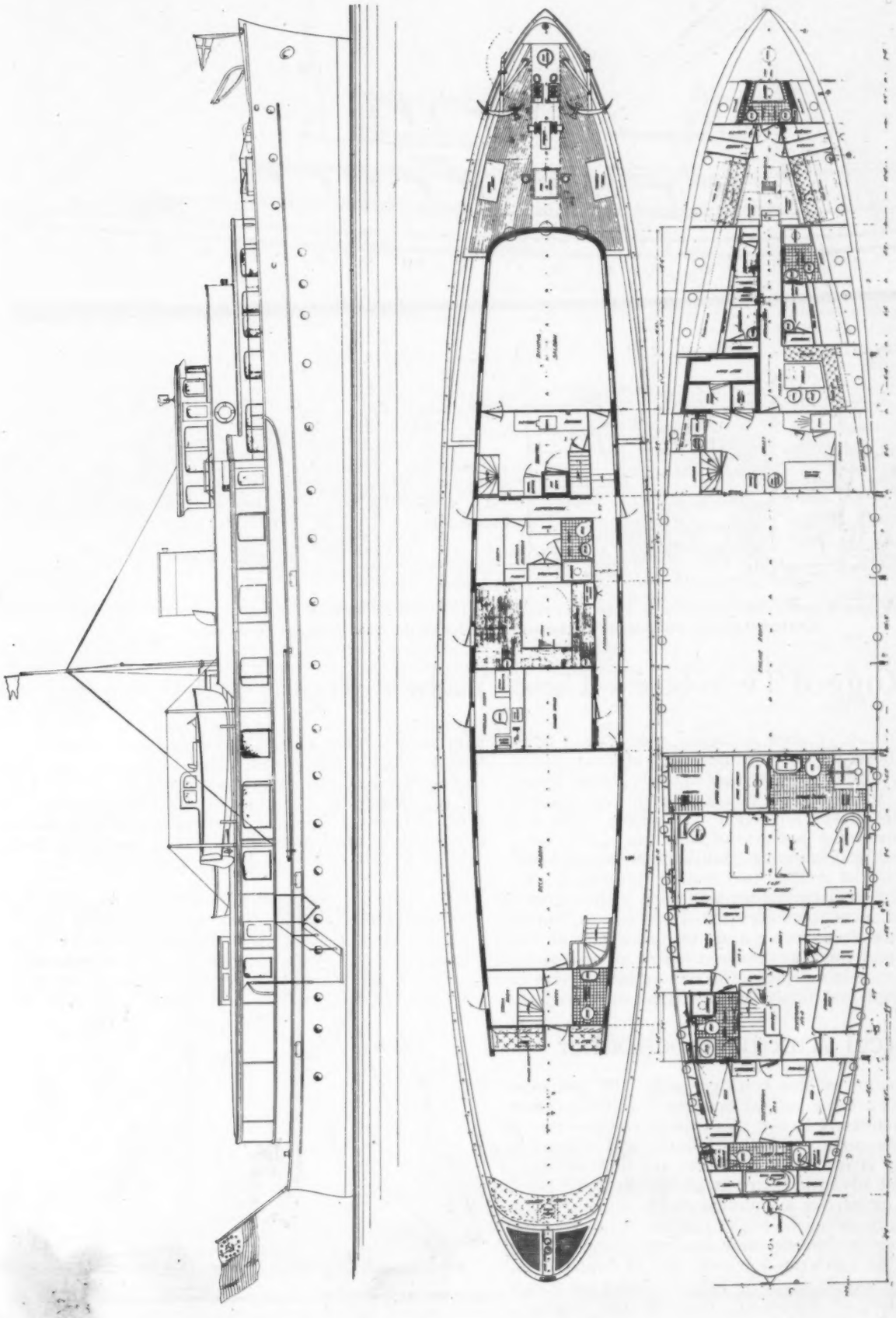
(*Continued on page 108*)

The Fifth Match for the America's Cup

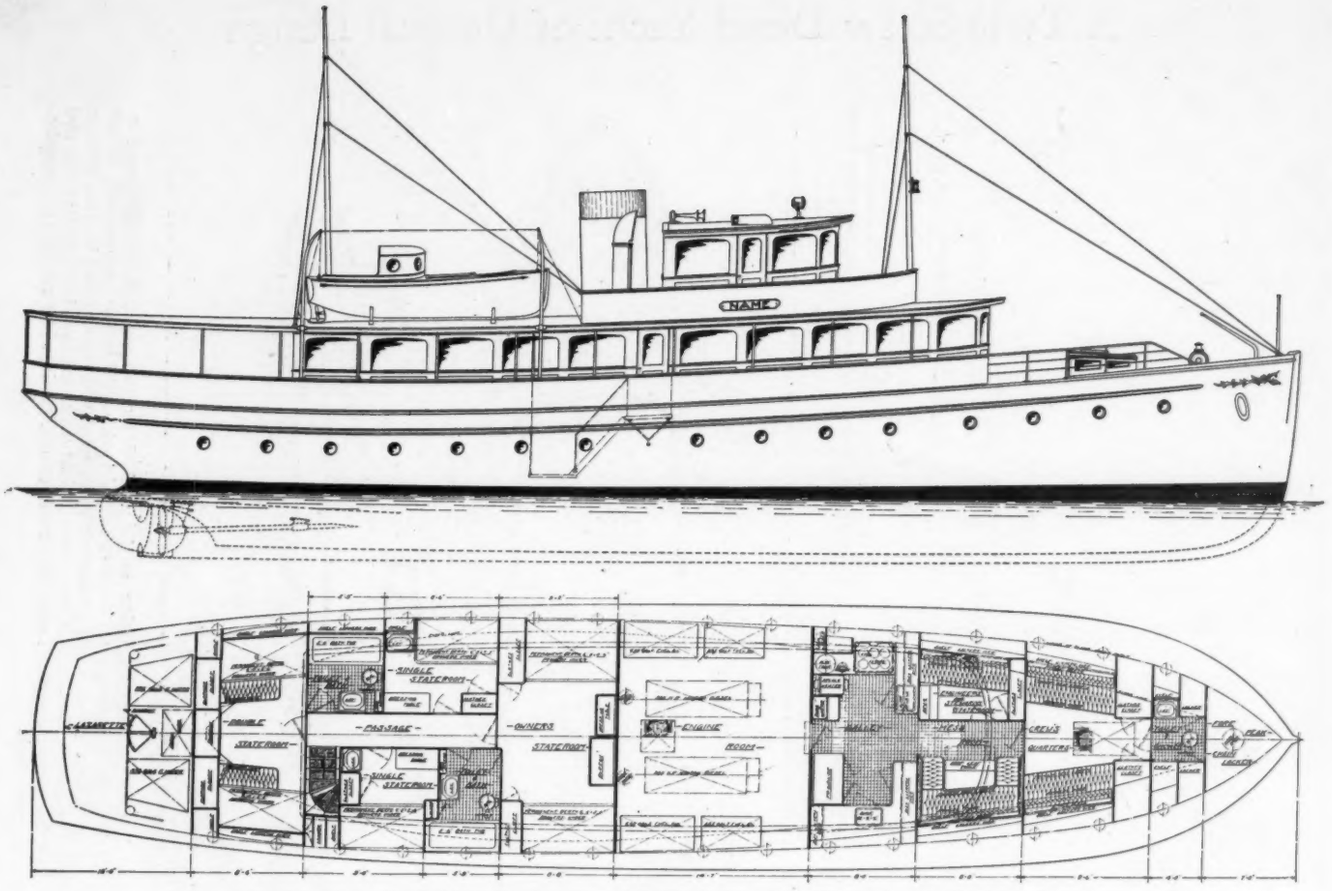
In 1885 the Royal Yacht Squadron challenged in behalf of Sir Richard Sutton, one of the finest sportsmen that ever sailed for the cup. To meet his cutter *Genesta*, Edward Burgess, father of the designer of *Enterprise*, turned out the *Puritan* for a syndicate headed by General Charles J. Paine. The latter won both races. The artist, L. A. Shafer, shows *Puritan*, with topmast housed, leading the *Genesta* home in the last race, which the American boat won by 1 minute, 38 seconds.

In the first race the *Puritan*, on the port tack, tried to cross *Genesta* at the start, fouling the latter and snapping her bowsprit at the stem. *Puritan* was disqualified and the Race Committee told *Genesta's* owner that if he would sail the course he would be awarded the race. But Sir Richard Sutton replied, "We are much obliged, but we came over here for a race, not a sailover."

A Twin-Screw Diesel Yacht of Unusual Design



The twin-screw Diesel yacht pictured above was designed by Tams, Inc., for A. C. Murphy, and is now nearing completion at the yard of George Lawley & Son Corporation, Boston. The design is unusual and attractive, the architects having been among the first to develop the cruiser type of stern in Diesel yachts. She is 130 feet over all, 22 feet beam, and 7 feet draft. Two Winton Diesel motors, each developing 375 h.p., will drive her at a 13 knot speed, while all electric equipment will be operated by two Winton generators of 15 k.w. each. The continuous deckhouse contains the big deck saloon, dining saloon, captain's room, trunk room, etc. Below decks are four large staterooms and three complete baths. She is completely equipped with every modern convenience for long cruises, her cruising radius being 3500 miles on one fueling. She carries two launches and one dinghy, all stowed on the upper deck.



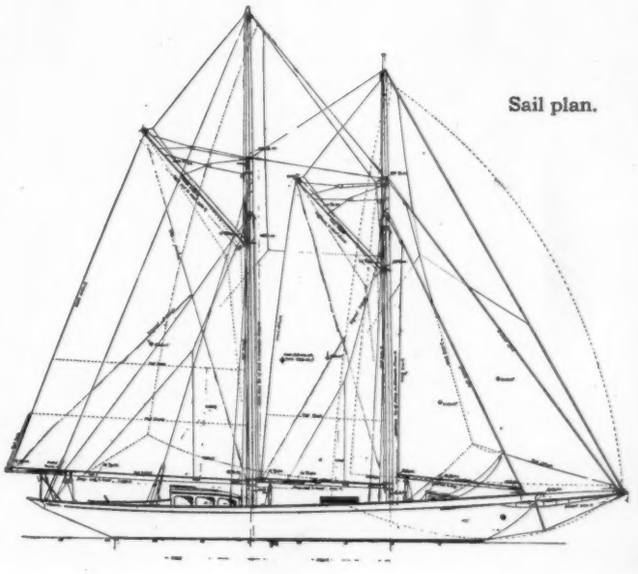
Outboard profile and interior accommodation plan of the Gray-designed Diesel yacht.

A Rugged Twin-Screw Diesel Yacht—Roomy and Powerful

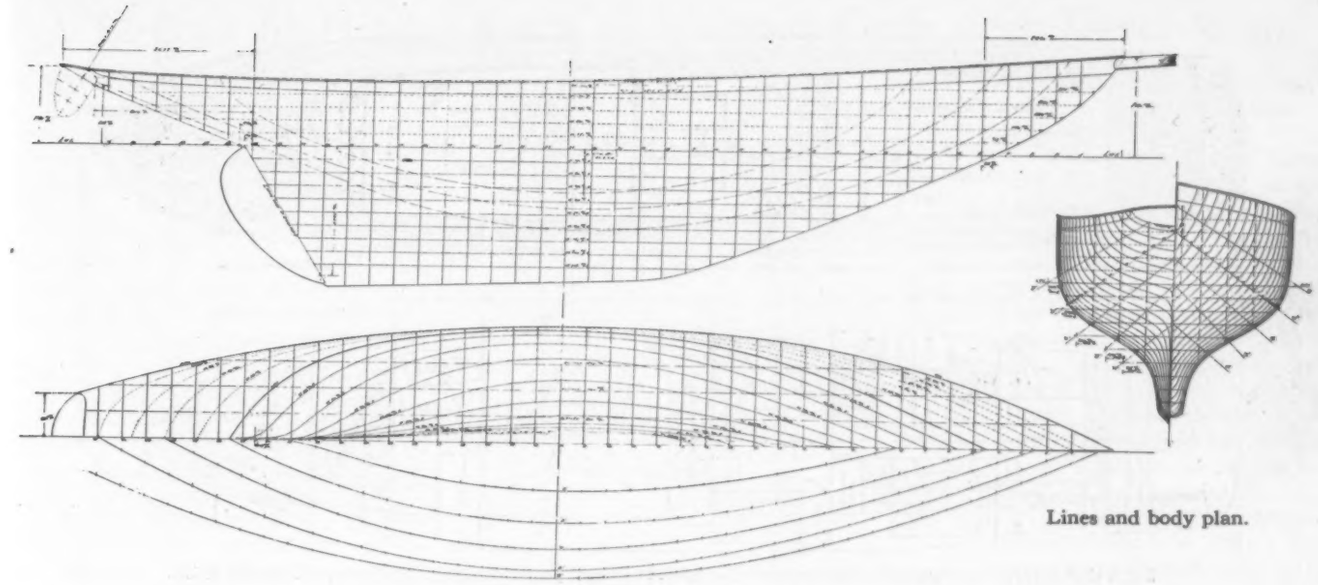
THE plans above show a rugged, able type of twin-screw Diesel yacht from the board of Gray Boats, Thomaston, Maine. She is 95 feet over all, 20 feet beam, and 5 feet draft, and is powered with two Winton Diesel motors of 400 h.p. each. The ample beam and freeboard, and other features of the design, indicate a craft with excellent seagoing qualities. The accommodations below decks include two double staterooms, two singles, and two bath rooms, with fine galley, crew's quarters and mess room forward. Deck saloon, dining saloon, pantry, toilet room and store room are on the main deck, and the pilot house contains a fixed berth. The deck space is excellent for this type and size of yacht. A launch and dinghy are carried on the boat deck.

A Steel Auxiliary Schooner

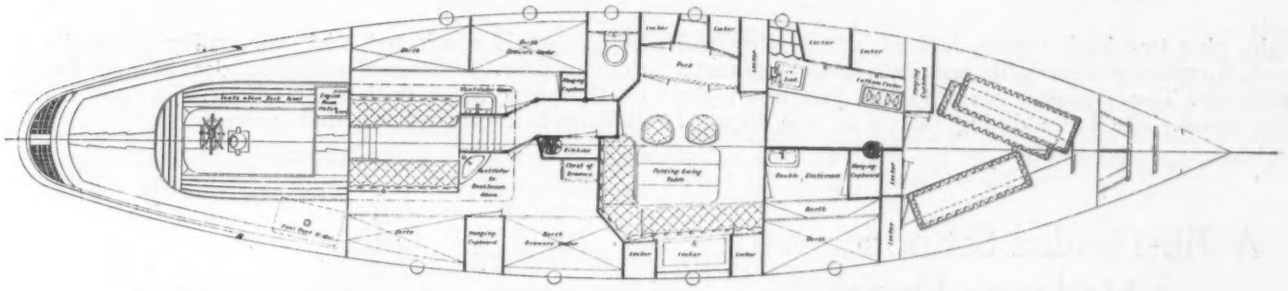
STEEL yachts in this country under 100 feet over all length are few and far between, but in European waters the tendency to use this type of construction is growing constantly, and in Holland and Germany many of the latest cruising yachts are built of steel. The principal advantages are an absolutely tight boat, an increase in interior accommodations of about 15%, and practically unlimited tank capacity. An interesting steel schooner is *Lelanta*, now nearing completion at the yard of G. De Vries Lentsch, Jr., at Amsterdam, Holland. She was designed by John G. Alden for Ralph St.L. Peverley, of Ellesmere, Port Wirral, England, the former owner of the Alden-designed schooner *La Goleta*, which took second place in the Fastnet Race three years ago. Her dimensions are: l.o.a. 65′ 5″; l.w.l. 46′ 5″; beam, 14′ 7″; draft, 8′ 10″; displacement, 39 tons; sail area, 1790 sq. ft. The construction of the hull is entirely of steel, with flush plating, and teak decks.



Sail plan.



Lines and body plan.



Interior accommodation plan of the Alden-designed, 65-foot steel schooner designed for Ralph St.L. Peverley.

She will carry hollow spars, and will be used for cruising in British waters, and is a very probable entry in the Fastnet Race, where her performance will be watched with interest on both sides of the ocean.

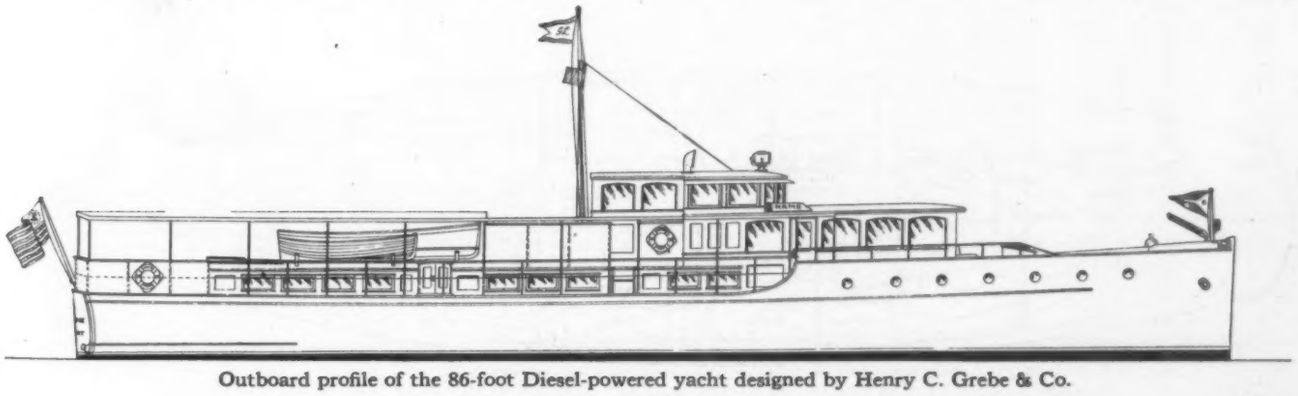
The interior of *Lelanta*, which was worked out by the owner and builder, shows main cabin, three double staterooms, toilet room, large galley and roomy forecastle, besides a most comfortable semi-sunken deckhouse, which in no way detracts from the appearance of the boat. The motor is a 30 h.p. Red Wing, and water and fuel tankage is unusually large, as is the locker and stowage space throughout the ship.

The rig follows Alden practice fairly closely, but the hull appears to have more freeboard, fuller garboards and more deadrise than many of this designer's schooners. The same builder last year turned out a slightly smaller, but quite similar, schooner for a prominent Dutch yachtsman, also from Alden designs.

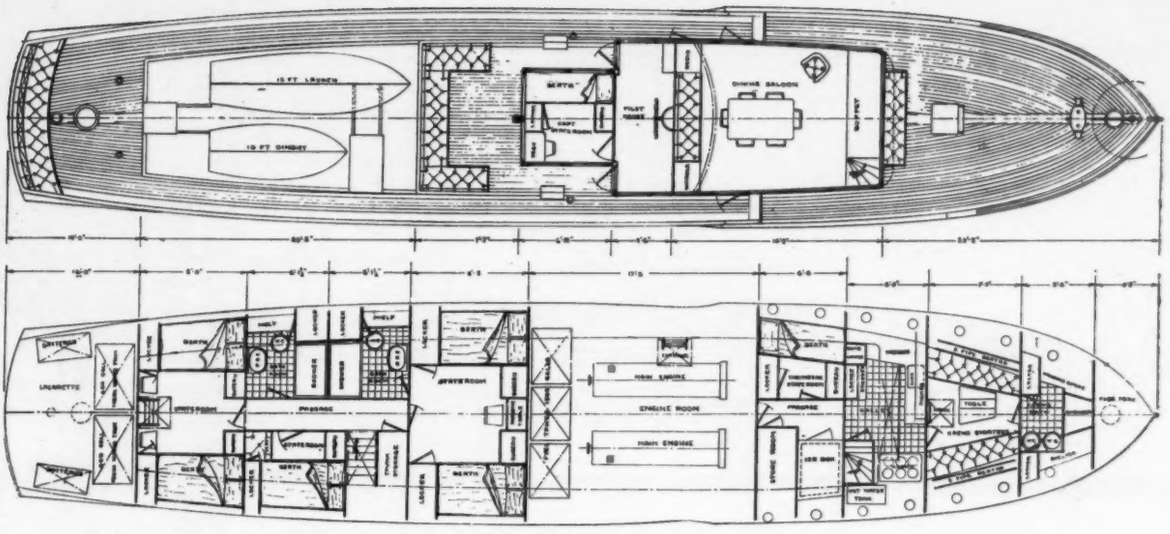
A Fast, Attractive 86-Footer with Twin Diesel Motors

ON this and the following page are the plans of a fast and attractive twin screw Diesel-powered yacht from the board of Henry C. Grebe & Co., of Chicago, which differs materially from the designs of other Diesel-powered craft in this issue. She is an 86-footer, with 16′ 4″ beam and 4′ 10″ draft, and besides being powerful and able, is designed to click off 18 knots when her two 300 h.p. Winton Diesels are opened up. The straight sheer, with raised deck forward, and deck houses and pilot house have been worked into a decidedly harmonious and snappy profile.

Below decks we find two double staterooms and a



Outboard profile of the 86-foot Diesel-powered yacht designed by Henry C. Grebe & Co.



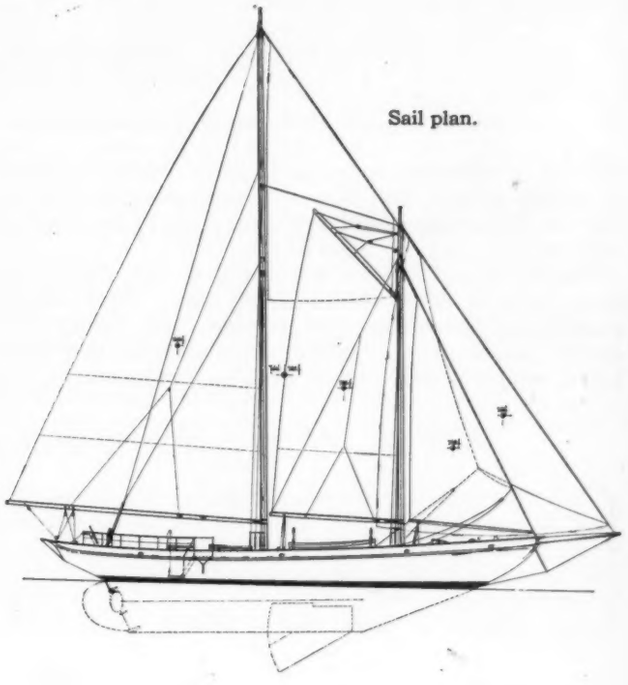
Deck and interior accommodation plans of the 86-foot Diesel yacht designed by Henry C. Grebe & Co.

single, plus two bath rooms, lockers, etc. Galley and crew's quarters are forward, and include an engineer's stateroom. The captain's stateroom is just abaft the pilot house. The large dining saloon in the forward deckhouse is connected with the galley below by a dumb waiter. An unusual amount of deck space is found on the observation deck and abaft it. Fuel and water tankage is ample for extended cruises.

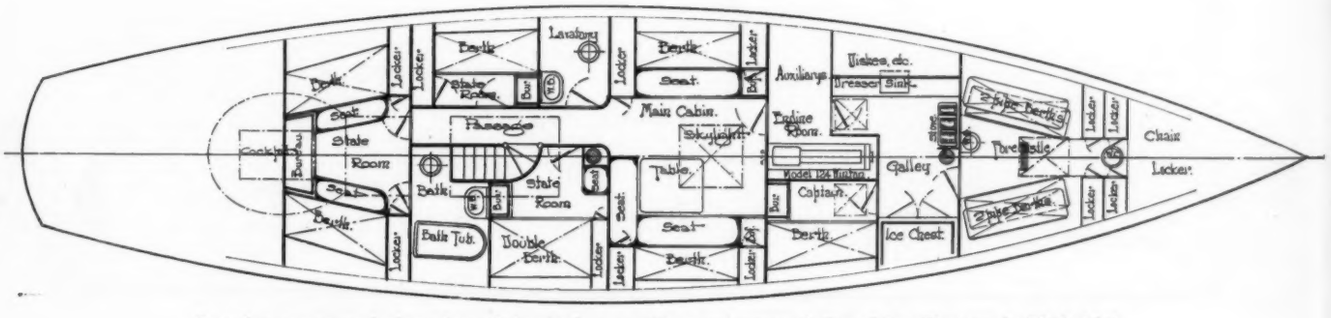
A Jib-Headed Schooner with Moderate Draft

HERE are the plans of a handsome and able cruising schooner with jib-headed mainsail, whose draft of 8 feet will enable her to enter many harbors which otherwise would be inaccessible. She was designed by Chester A. Nedwidek, the New York naval architect, and is 81′ over all, 60′ water line, 18′ 6″ beam, and 8′ draft, with a centerboard housing in the keel with which she should be able to hang on well when going to windward. A 6-cylinder motor, bedded on the center line just abaft the foremast, will give her good speed when the wind fails.

The accommodations are excellent, and include two double and one single staterooms, bath room, wash room, main cabin with two berths, captain's stateroom, unusually large galley, roomy forecastle and forepeak. The entire plan has been worked out with every attention to details. Tankage for fuel and water is ample, and there is ample locker and storage room for owner and guests on protracted cruises.



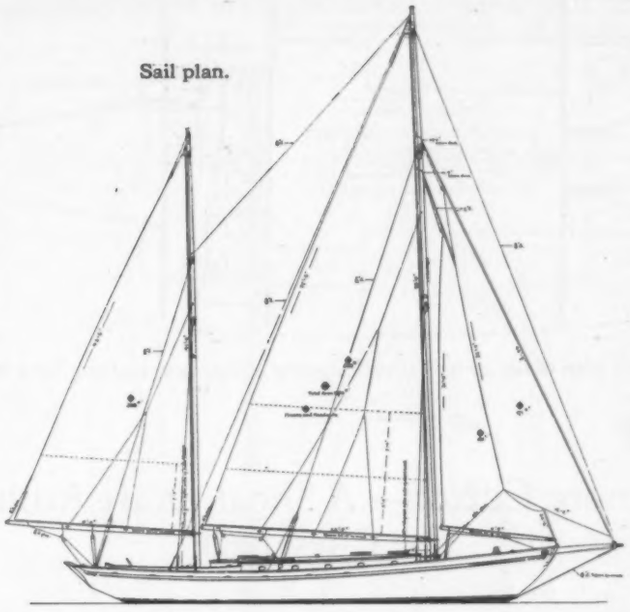
Sail plan.



Interior accommodation plan of the 81-foot auxiliary schooner designed by Chester A. Nedwidek.

A 52-Foot Jib-Headed Ketch of Moderate Draft with Diesel Motor

TWO features which many cruising yachtsmen are much interested in are shoal draft and Diesel power. The first opens up many charming cruising grounds and harbors which are barred to deep draft yachts, while Diesel power contributes to safety and greatly increases the cruising radius. These features have been incorporated in the moderate size auxiliary yacht of rugged construction, pleasing appearance, and fine sailing ability shown in the accompanying plans from the boards of Munro and Munroe, naval architects, of Boston.

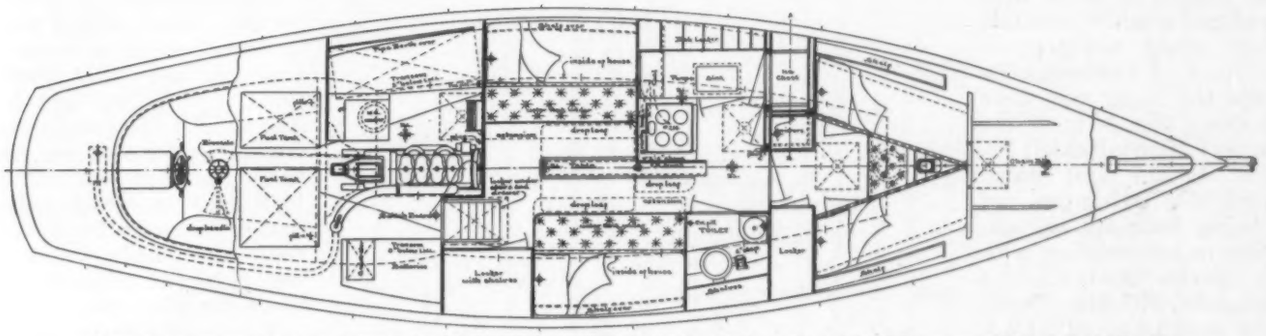


Sail plan.

The lines show an attractive hull with fairly short ends, good freeboard and considerable deadrise for such a shoal draft craft. The deep "V" sections forward work into a powerful midship section, and the lines aft are long and easy. Of particular interest is the wide keel, which makes possible placing all the ballast outside, — an iron shoe weighing 14,000 pounds.

The arrangement plan provides a roomy main cabin with two fixed berths and two extension transoms with drawers under. Forward of the cabin are lockers and a toilet room to starboard, and a roomy and convenient galley to port. The owner's stateroom is forward, and contains two built-in berths with storage under, lockers, bureau and toilet.

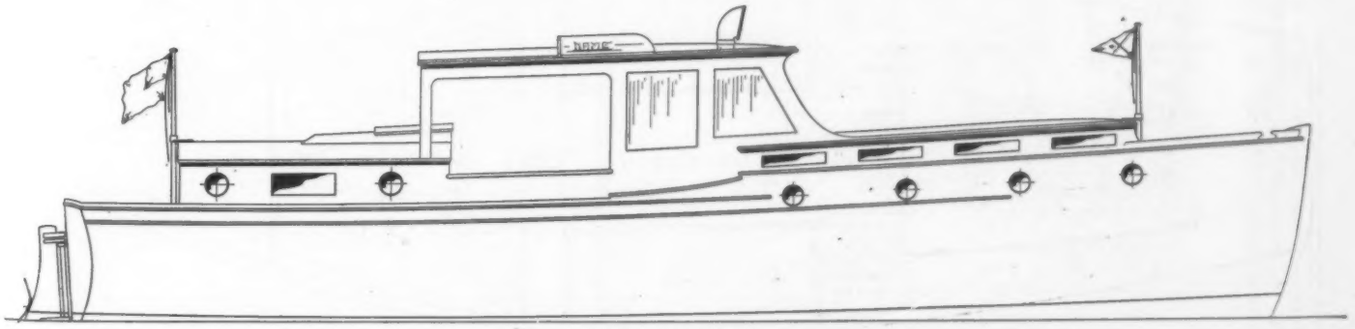
The engine room, separated from the cabin by a watertight bulkhead, and having separate entrance from deck, is of sufficient size for installation of a 40 to 60 h.p. Diesel motor. This room, which is exceptionally light and airy, contains auxiliary machinery, storage bins, and berth and toilet for the boatman. The dimensions are: l.o.a. 52′; l.w.l. 40′; beam, 13′9″; draft, 4′4″.



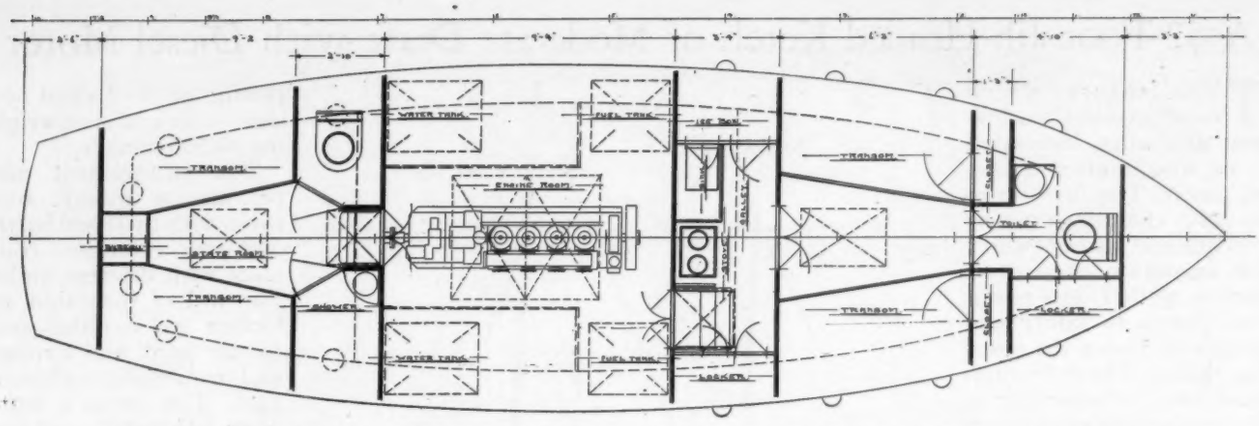
Interior accommodation plan of the jib-headed, moderate draft ketch designed by Munro and Munroe, of Boston.

Kickapoo—A Small Diesel Yacht for the West Coast

THE plans below and on the next page are of *Kickapoo*, one of the smallest Diesel-powered yachts built this year. She is from the board of Edson B. Schock, of Los Angeles, and is being built by Waring and Barnes for Eugene H. Rosenthal, of Los Angeles. Her dimensions are: l.o.a. 38′9″; l.w.l. 37′3″; beam, 11′3″; draft 3′9″. Her engine is a 40 h.p., 4-cylinder, 2-cycle Fairbanks-Morse. The main cabin, galley and toilet room are forward, and double stateroom, shower, toilet room, etc., aft. *Kickapoo* is a fine looking little cruiser, and her performance will be watched with interest.



Outboard profile of *Kickapoo*, a Schock-designed, 39-foot Diesel-powered cruiser.

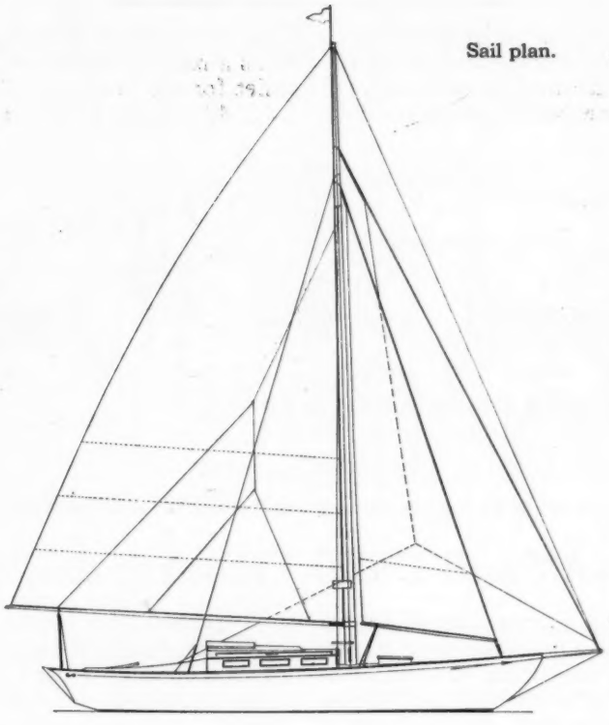


Interior accommodation plan of the 39-foot Diesel-powered cruiser now building for a West Coast yachtsman.

The Baltimore Cutter—A Shoal Draft Auxiliary from the Chesapeake

THE Baltimore Cutter, as her name implies, comes from Chesapeake Bay, and was designed to meet the demand of cruising men of limited means who wanted to cruise with speed and comfort in a craft which could navigate in sections of the country where the water was none too deep. She is from the board of Henry Keidel, Jr., yacht broker and naval architect of Baltimore, and is being built by the designer in coöperation with the Owens Boat Co., of Annapolis, Md. Her dimensions are: l.o.a. 32′; l.w.l. 25′; beam, 9′; draft, 4′6″.

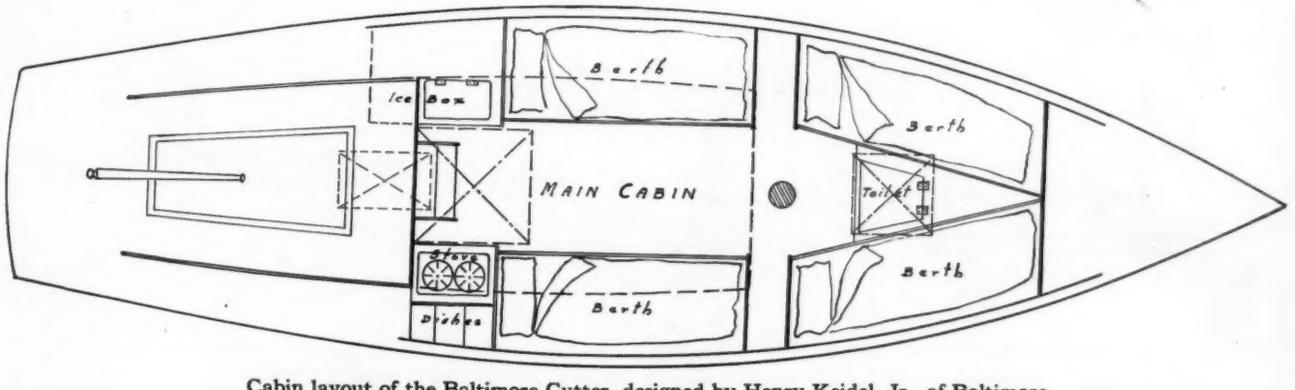
There is nothing radical in the design of the hull or cabin plan, the boat being a fast and comfortable little craft with moderately shoal draft and particularly suited to Chesapeake Bay. She has short ends and good freeboard, and an easily-handled cutter rig of moderate dimensions which should give her a good turn of speed in most weathers.



Sail plan.

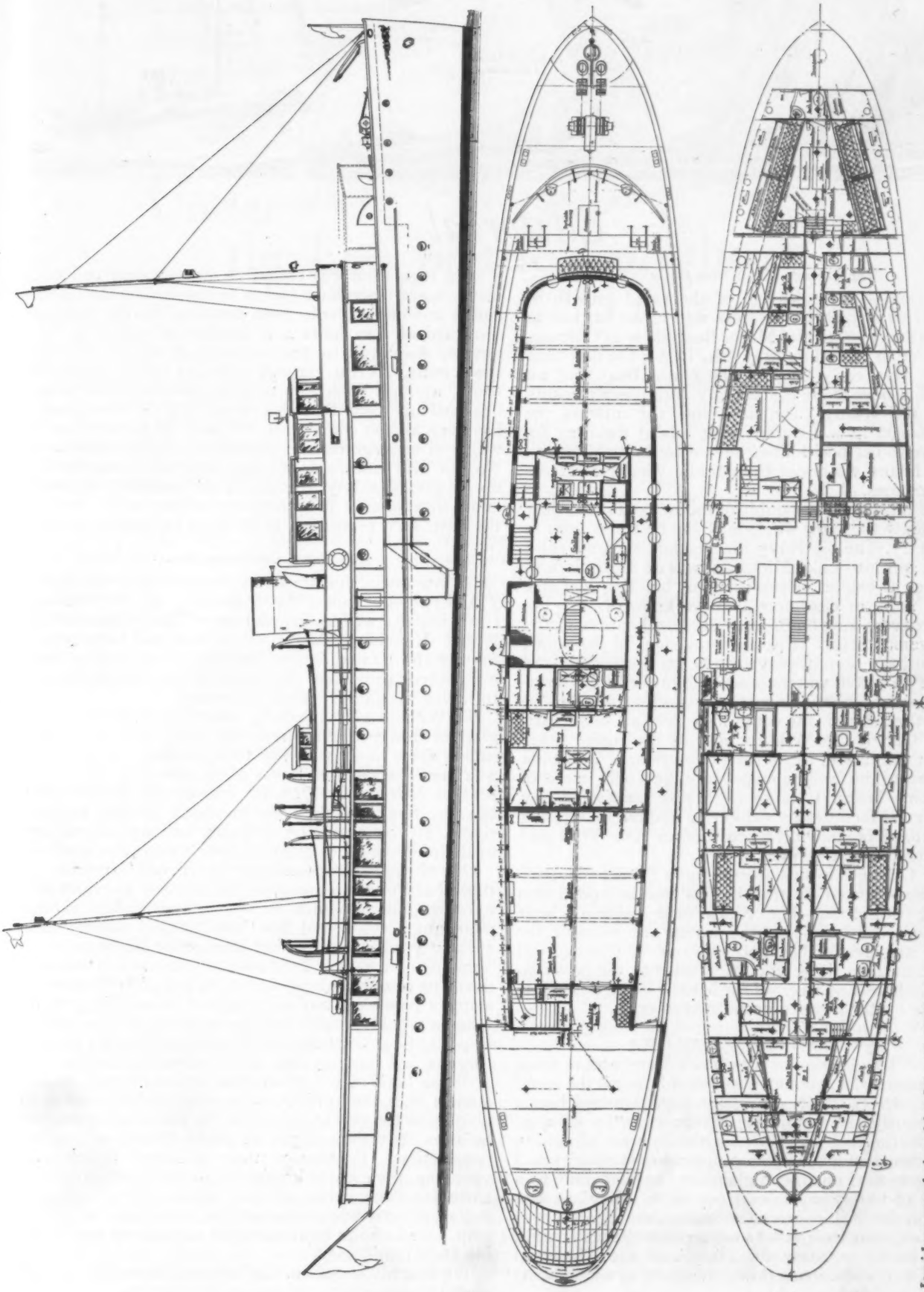
The cabin plan shows two berths forward, which may be curtained off to make a stateroom, main cabin amidships, and galley and ice box abreast the companion steps. Good headroom has been obtained without a high and unsightly cabin house. A Gray 2-cylinder, 8–10 h.p. motor will kick her along at a good clip when the wind fails.

While this little cruiser will be built to sell at a very moderate price, her construction will be sound in every way, some of the specifications calling for oak frames and keel, Philippine mahogany planking, canvassed decks, spruce spars, plow steel rigging, etc.

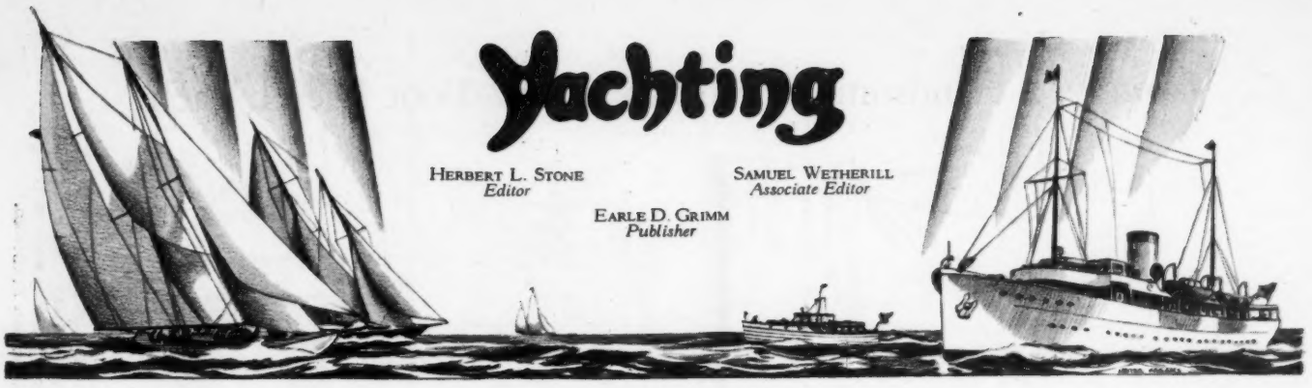


Cabin layout of the Baltimore Cutter, designed by Henry Keidel, Jr., of Baltimore.

Janidore, a Handsome Twin Screw 142-Foot Diesel Yacht



Janidore was designed by John H. Wells, Inc., for Mr. I. Zellerbach, of San Francisco, and is being built by the Defoe Boat and Motor Works, Bay City, Michigan. She is 142' 2" over all, 135' water line, 24' 2" beam and 9' 6" draft, and is powered with two Winton Air Injection Diesel engines of 350 h.p. each. Every modern improvement is incorporated in this up-to-date craft, and her equipment includes such items as electric refrigeration, hot water heating, mechanical ventilation, Sperry gyro-pilot, and radio sending and receiving apparatus. She has a 5000-mile cruising radius at a speed of 12 knots. The excellent accommodations may be seen from the plans. Her home port will be San Francisco.



Editorial

The Chicago Motor Boat Show

AS a convincing indication of the rapid growth of interest in yachting on fresh water, one has but to look at the very successful Motor Boat Show at Chicago, which came to an end on May 4th. This is the first time since the very early days of the motor boat that an attempt has been made to stage an exhibition of pleasure craft in the Windy City, and from the interest the affair aroused it is apparent that inland dwellers are fully alive to the possibilities offered by Lake Michigan and the inland waters of the Middle West for recreational purposes.

As a comprehensive exhibit of motor boats and their power plants the show was one of the best ever seen in this country. The big Navy Pier, extending some third of a mile out into Lake Michigan, was an ideal place to house such an exhibit, better than any building available in New York, or elsewhere that we know of. The big fleet of cruisers, runabouts and outboard boats collected by the genial "Hub" Erickson, manager of the show, could not have been displayed to better advantage, and with the protected waters inside the breakwaters forming Chicago harbor, demonstrations afloat were to be had for the asking. One could look over a Chris-Craft, a Baby Gar, a Dee-Wite, or any of the many other boats on exhibition, including the outboards, and then step down to the landing stage and take a spin in one of these same boats. It is to be hoped that some day equally good facilities for exhibiting and demonstrating standardized boats will be provided in New York and other large boating centers.

That Chicago is fast becoming a "boat-minded" city was evidenced by the throngs that attended this first big exhibition. The educational value of such shows in localities where the waters are suitable for boating are inestimable, and this one in Chicago did much to awaken those who attended it to the possibilities of the lakes and rivers of the Middle West, now made available by the modern power-driven craft.

Controlling Speed of Power Boats

RECENT legislation in New York State, and in other sections of the country as well, to control the speed of motor-driven craft, especially high powered boats, is apparently the beginning of regulation by state or federal authorities to check, in the interest of safety, the reckless and inconsiderate operation of speed boats that has caused much complaint in the past. Due to a number of unfortunate accidents, with attendant loss of life, on the St. Lawrence last season, the legislature of New York State has passed a bill regulating speed within harbor limits in Alexandria Bay and the Thousand Islands, and also cutting down the speed at which boats may be operated at night.

Such regulation was bound to come, sooner or later, just as speed limits have had to be imposed on the roads, and it has undoubtedly been hastened by the reckless disregard of the rights and comfort of others so frequently displayed by the owners and drivers of high speed craft. To tear through a harbor full of anchored boats, at high speed, or to pass smaller boats while "opened up" and throwing a big bow or stern wave, has been all too common in the past. If persisted in it will lead to more drastic regulation than is necessary. No one will complain of sane regulation framed to obtain greater safety. But unless the operators of power boats show greater judgment and consideration than in the past, such regulation is likely to be unduly severe.

To Revive the Sailing Ship

AN interesting movement has been started recently in England, under the leadership of Sir William Garthwaite, a well-known shipowner, and supported by Walter Runciman, M.P., whose firm has been representing the United States Shipping Lines in England, and others prominent in shipping and naval circles, to revive the sailing ship in commerce.

Sir William Garthwaite is greatly concerned at the gradual disappearance from the high seas of British sailing ships, mainly owing to strandings or stress of weather. The last wreck was of his own ship the *Garthpool* in November, 1929, off one of the Cape Verde Islands. She was the last surviving British square-rigger. He believes that a strong attempt should be made to revive the sailing ship, even though run at a loss.

One of the main reasons for this revival, according to those back of the movement, is that sail provides the finest training possible for the young cadets in the merchant service, and fits them to deal quickly and efficiently with any difficult emergency likely to arise. Training on a sailing ship, both for officers and seamen, develops resourcefulness and a high degree of seamanship not possible in any other type of vessel. The present scheme would provide for the building of new sailing ships at about £50,000 each. They would carry "rough" cargoes, and carry at least sixty cadets for training.

Those back of the movement feel so strongly on the subject that they propose to make a public appeal to help build the new sailing ships. Sir William Garthwaite believes that they might be made almost a "paying proposition" if, besides their ordinary commercial voyaging, the great shipping companies would subsidize them for the training of their future officers. He also declares "that whilst England is neglecting the sailing ship, many of the rival maritime nations are encouraging their rebuilding."

We heartily concur in the belief expressed above and wish the movement the success it deserves.

Under the Lee of the Longboat

by Cap Stan

GORDON MUNROE, the young Boston designer who has been so successful in developing the "50-50" type of cruiser — *Nancy R* is a good example — writes in that he won't enter his small cruiser, a real husky craft, in the Bermuda Race against a bunch of "camouflaged 10-metre boats." He would like to see a prize offered for genuine small cruisers, under 40 feet over all, such as YACHTING has put up for the Bayside-Block Island Race. While he may be exaggerating a bit in regard to the "camouflaged 10-metres," it certainly is pretty hopeless to race a little one against big ones, no system of measurement and time allowance yet having been evolved under which big and little boats may race equably — a remark which I may have made before, but which will bear repeating. Now, here's a thought: Next year a Transatlantic Race is scheduled — for those who can make it. The minimum limit will probably be 45 feet over all. Why not organize a small-boat race to Bermuda, for craft under 40 feet? It wouldn't conflict in any way with the Transatlantic affair. The little fellows could fight it out among themselves, without facing the practical certainty of coming in two or three days after the majority of the fleet. Rate them simply on over all length, and get together a hard-boiled committee which would determine what was a real seagoing cruiser, and bar all others. You would probably get half a dozen or more hardy souls who would be glad to tackle the admitted hardships entailed when one races a small boat for seven or eight days in the open sea. If this idea appeals to you, write in about it, and maybe some such event can be arranged.

* * *

People are asking what it costs to build and campaign one of the America's Cup defense candidates, and while no one knows definitely, we hear amounts in the neighborhood of a half million mentioned in somewhat hushed tones. Well, I haven't any better information than the next fellow, but when you stop to think that each boat must necessarily have two masts — possibly more — at a cost of about $12,000 each, and then hear about two boats which have ordered "experimental" duralumin spars at a cost of $34,000 apiece, one wonders if the half-million estimate isn't quite a bit shy of the final bill which each syndicate will have to pay. Probably. And who knows what it will cost the challenger, what with chartering a large steam yacht in addition, and towing the green flyer across the ocean and back? It certainly is a game which the average yachtsman will have to leave to the fortunate few who are better endowed with this world's goods.

* * *

Several of the new crop of new 6-metre boats which have been built to meet the British invasion have had a couple of races, and though nothing conclusive has been shown, some of them appear to have the goods. Jack Shethar's new Paine-designed craft won her first race and did well in her second, and one of the Stephens-designed boats got a first and second in two starts. With two or three yet to be heard from, prospects seem good for our taking a leg on the British-American Cup in the series to be held off Oyster Bay next September.

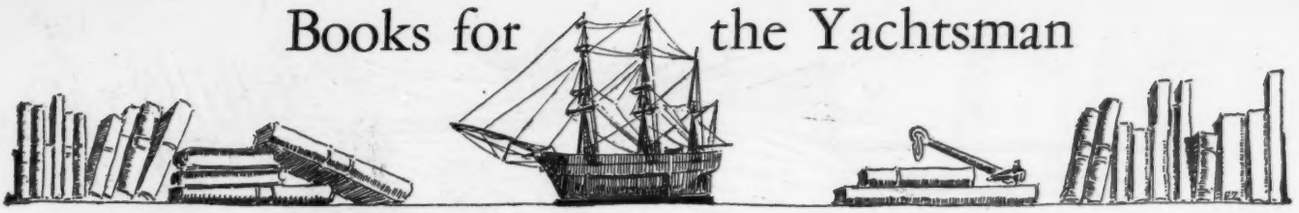
* * *

"When a bunch of Americans decide to be pig-headed they certainly can beat the world at it." So runs a line in the April 18th issue of our British contemporary, *The Yachting World*, written by a gentleman signing off as "Skeg." Admitting that a bunch of Americans may be pig-headed, it's the first time I ever knew that they were considered to be undisputed champions in that branch of sport. Always thought that British and Scandinavian subjects were pretty good, too. Still think so. Skeg's awarding the championship to Americans will hardly meet with whole-hearted approval the world over. Wonder if he ever heard of the expressions "bull-headed Britisher," or "Skowegian Squarehead"?

* * *

Echoes of the Albany-New York Marathon seem to indicate a lot of things. Once more perfect weather and water conditions were had; once more the record was broken; once more quite a number of the roaring outboards fell by the wayside. The new, big Class F fellows were shown to be definitely faster than the older Class D and E motors, but need minor changes before they can stand up under a long, hard grind. We read that the majority of the casualties were due to driftwood, débris, poor piloting, and so on. No such alibis were needed for the snappy little inboards, practically all of which came through with flying colors. The so-called Junior Runabouts certainly started the season off with a bang. We'll have to keep an eye on them.

Books for the Yachtsman



The Long Harpoon

By Arthur C. Watson

(George H. Reynolds, 1929, $2.00)

THERE is little doubt that even today whaling still holds a position of tremendous interest, probably because a romance that is unique clusters about this group of deep sea sailors. The fascination of this adventure of a by-gone day is greatly abetted by the *Long Harpoon*, a collection of whaling anecdotes gathered from log books and other reliable sources.

Although designed as a collection, and not a complete story, this book gives the reader a feeling that it is a true picture of the trials and tribulations, the joys and adventures of a whaler's life. There is not a surplus of one kind of yarn and a lack of another. There is the story of the chase, or "Masafuera Jack," in which one finds the troubles of getting on to a whale and killing him — and in this instance the denizen of the deep got away with four irons. The whaler *Barclay*, credited with making one of the longest voyages on record, 65 months, has left a log of one of her trips from 1834 to 1837, which shows the hard luck which often prevailed, with long voyages, crews jumping ship and few whales.

Youth and age alike appear in the pages of the book. Masters in their twenties, and masters having passed three score years and ten, become the momentary heroes of the hunt for whales. Drawn from log books, the material is written in poor spelling, and doubtless with a poorer script, and from the diaries of individual members of the crews.

Some of the dangers of this sport, or business — it was both — are vividly portrayed in accounts of the sinking of the *Essex* by a sperm whale and the long journey of the ship's crew until they were finally rescued, after undergoing hardships that surpass belief. The difficulties encountered with natives and beach combers in the South Seas added to the trials of this already hazardous calling. The later rush to the whaling fields of the Arctic Ocean north of Bering Straits were not without their difficulties, as is shown in the account of the loss of the great fleet in the ice in 1871. The leisure time activities, of which there were many, are well described in the chapter dealing with scrimshaws and the use of the jack-knife. One is led to marvel, also, at the ability of some of the old masters in finding their way around, what with their limited knowledge of navigation.

With whales, storms, plague, calms and no whales, each page is filled with a charm, often enhanced by the quaint phrases of an earlier day, and all skilfully blended by Mr. Watson. Many of the yarns were originally published in Yachting and in *The Boston Globe*.

Mast and Sail in Europe and Asia

By H. Warington Smyth

(William Blackwood & Sons, Ltd., 1929)

IN attempting to describe the design, construction, rigging and handling of local craft in Europe and Asia, including what must total nearly two hundred various types of boats, one runs the risk of spreading the material somewhat thin. Mr. Smyth does not escape this difficulty in *Mast and Sail in Europe and Asia*, a revised issue of a book originally published in 1906. However, fault though that may be, the book is not without considerable interest, and the author has handled his subject matter in a most commendable manner.

As already intimated, in scope, the book deals with types of native craft found on the coastal ways of European countries, around the Mediterranean basin, the Indian Ocean, the Malay Peninsula, the Gulf of Siam, and China and Japan. The author well points out that differentiation in design of boats is due to the attempt to meet peculiar nautical problems which prevail in different localities. As a result we see the Baltic developing squaresails for heavy weather, something as the parent of the lugsail. The Norwegian work-a-day boats, while of shallow draft, are capable sea boats because of the extreme lightness of their ends, which makes them remarkably dry. Yet, on the other hand, the Swedes obtained the same results through plenty of beam and solidity.

Holland, probably the ideal spot for sailing craft, was quite naturally the home of pleasure craft, and the Thames barge is a direct development of the Dutch type of boat, with leeboards, and even to the bright paint work. It is interesting to note that the boats of Holland have undergone little alteration, so admirably were they suited to meet conditions in these waters. To the Dutch is also due credit for the fashion of the ketch, designed to meet the needs of simplicity of handling with a small crew.

A striking example of the effect of local conditions is afforded by the developments in the Falmouth Estuary. Strong tides and narrow channels, as in the Solent, have made these waters the home of a distinct class of fore-and-aft boats, though set in the midst of a lugsail coast.

The development from squaresail to lugsail, lateen, and fore-and-aft in various parts of the world is clearly traced and most interesting. Possibly the lack of American types, and the absence of discussion on yachts, might make the book lack interest for some. The profuseness of black and white sketches adds to the enjoyment of the volume and helps greatly in carrying the text. Although encyclopedic in character, the book is of a distinct value to those concerned with the historical and geographical development of boats.

J. G. S.

When Greek Meets Viking in Miami

(*Continued from page 97*)

timed by the writer while the ship lay at dock in a flat calm. It took the corpulent sailor at least three minutes to get below, and it is to be wondered what will happen if he ever tries to get below when it is blowing hard and the seas are making.

His narrow berth runs fore and aft and is entirely surrounded with provisions (all of which he will take directly out of cans without heating), medical supplies, water tanks and spare gear.

Once in this cabin, having set a sea anchor and taken in sail, the skipper battens down his hatch which is almost hermetically sealed, opens a tiny mushroom ventilator over his head — if the weather permits — and lets the elements enjoy themselves with his ship. He has a cowl ventilator forward which is self-bailing, so he will get a certain amount of air provided the cowl is not swept away by a playful sea.

Captain Ganapolis is what he terms "a practical navigator," a designation which would certainly shock the late Mr. Bowditch. Aboard the *Ulysses* are neither chronometer, sextant, or even a log. Steering in an east-north-easterly direction, the skipper knows he will hit either Europe, the Scandinavian peninsula or Africa, and thereafter there will be no concern about whether he sails north or south for all he has to do is to follow a coast to reach Athens in course of time.

Now this scheme sounds harebrained enough to be given no credence were it not for the fact that the same man claims to have made an eastward Atlantic passage from New Orleans to Barcelona in 56 days in 1926. Has anybody heard about it?

Daily the captain is testing out his ship and stowing and restowing his gear. He carries food and water for four months, all of which, in the writer's opinion, he will need before he has finished beating his way through the Trades, across the Horse Latitudes and into whatever port the ship may bring him on the other side of an ocean which is still just as big to sailing ships as it was in the days of our fathers.

Of Interest to the Skipper

Dodge Gives Service

RECOGNIZING that the matter of service is of major importance to motor boat owners, the Horace E. Dodge Boat & Plane Corporation has announced a new and broader service policy for owners of Dodge boats — one of the most complete ever offered the boat purchaser. Before delivery, every new boat must be in perfect condition — thoroughly lubricated, properly adjusted, and ready to operate with maximum efficiency immediately. Every owner is entitled to free inspection and minor adjustments after the first ten hours of operation, and is further entitled to free replacement of any part which may prove defective in workmanship or material, within the term of Dodge's standard warranty. Any Dodge distributor or dealer in the United States will attend to any servicing, so that a Dodge boat will be well taken care of on any part of the country's waterways.

A New "Six"

A new 6-cylinder marine engine is offered by Long Island Motor Works for use in cruisers or runabouts. It is an L-head machine with cylinders 4⅜″ by 5⅛″ and is rated 65 h.p. at 1,000 r.p.m. Its weight is 1,650 pounds. There are two Ricardo type cylinder heads with two sets of spark plugs using two independent ignition systems, a ZR 4 Bosch magneto and a Delco distributor. Paragon "90 Line" reverse gear is fitted. Motor has two carburetors with Oberdorfer backfire traps, bronze oil and water pumps, aluminum alloy pistons, and is completely enclosed.

A Fast Run

A fast run from Jacksonville to New York, highly gratifying to all concerned, was made recently by the 45-footer *Tee Pee*, a new Huckins Fairform Flyer owned by Ralph A. Parker, of the Larchmont Yacht Club. Manned only by a captain and one paid hand, running only in daylight with throttles half open, *Tee Pee* made the trip in six days, four hours and nine minutes, the twin 225 h.p. Kermath motors turning up only 1550 r.p.m. as against a maximum of 2000 r.p.m. This comes pretty near being a record run for a stock cruising craft, with regular stock motors, both boat and motors having recently completed a 1500-mile cruise to the Bahamas and return.

Davis is Busy

Business continues to keep brisk with M. M. Davis & Son, of Solomon's Island, Maryland, who have been making fine progress in the yacht building game the past few years. Their most recent orders include a 62-foot schooner for Paul Nevin, of New York, and a 70-foot schooner for J. Rulon Miller, of Baltimore. Both craft are from designs of John G. Alden.

Lux for Safety

Due partly to the demand of prospective boat owners, and to the desire of boat builders to safeguard their craft from danger of fire, the Lux System is becoming more and more popular with builders of stock craft. Among the 1930 boats upon which Lux is standard equipment are the Chris-Craft 38-ft. cruiser, 34-ft. cruiser and 48-ft. Flagship; Dawn Cruisers, two models; Dodge 45-ft. cruiser; Fleetwing "35"; Dart sedan runabout; four Wheeler models, Banfield Sea Skiffs and practically all Luders-built craft.

The new Baby Gar "22" on a sharp turn at full speed, with helm hard over.

Hard Over!

One of the remarkably fine features of the new Baby Gar "22" is shown in the accompanying photograph — the perfect stability on a sharp turn at full speed with helm "hard over." This is made possible by the ample beam of 6 ft. 5 in., the wide, flaring bows which distinguish Gar Wood's racing models, and the same sharp V-bottom design which tapers to a flat plane at the transom. This latest of Gar Wood's products is powered by a Chrysler Crown engine, which gives her a speed of 30 miles an hour.

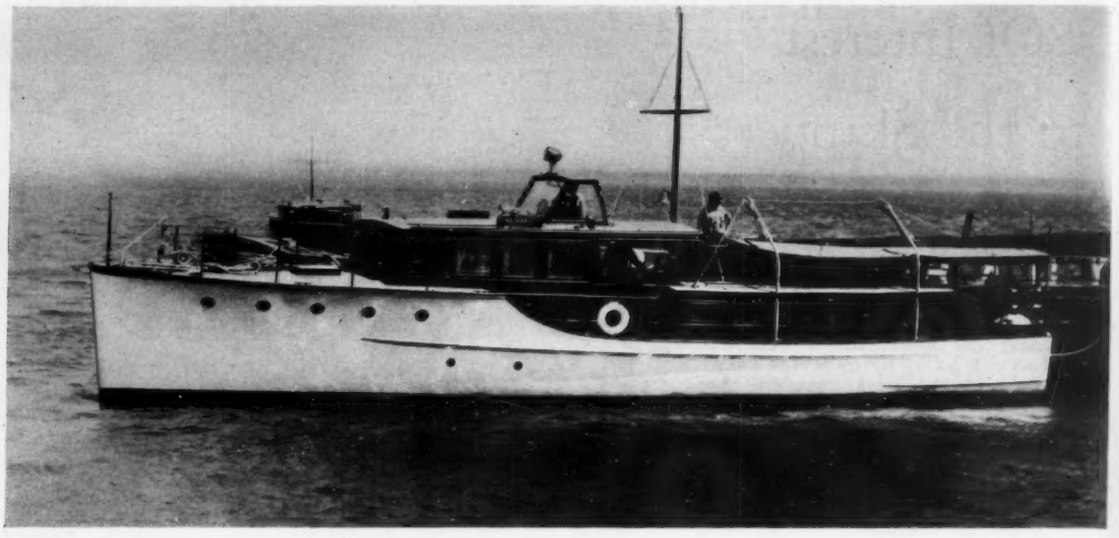
The kayak in which her owner, Kai Pless-Schmidt, intends to make a Transatlantic crossing this summer.

Music at Will

On such fine yachts as the *Hi-Esmaro*, *Margo*, *Wayfarer*, and *Camargo*, the Victor Talking Machine Division of RCA-Victor Co., Inc., has made special installations so that the owner's party and also the ship's officers may enjoy either a broadcast program or one supplied from records. On *Hi-Esmaro*, for example, the control cabinet is centrally located and accessible and is fitted with radio set, amplifying equipment, automatic record changing device and so on. Wires lead to five speaker locations in the living room, smoking room, observation room, officers' mess and after deck. Any combination of speakers may be played simultaneously and there are separate volume controls. As the power supply of the yacht is 110 volt DC, while the equipment takes 110 volt 60 cycle AC, a rotary converter is fitted and supplied with carefully designed filters. Each unit of electrical apparatus aboard is also fitted with filters to avoid interference with radio reception.

Kayaks, Whales and Outboards

To prove that his unsinkable kayak, or canoe, would be a satisfactory lifeboat for aircraft on transoceanic flights, Kai Pless-Schmidt recently made a nine-day ocean trip which nearly ended disastrously. Leaving the Faroe Islands for Bergen, Norway, the intrepid inventor encountered a large whale on the sixth day. After nearly upsetting the kayak, the whale chewed off the Johnson Sea Horse motor and disappeared in the depths to digest his metallic breakfast. Pless-Schmidt used his oars and sail, struck heavy weather, and was at the point of exhaustion when he was rescued by the crew of a Norwegian fishing vessel. Notwithstanding this experience, the inventor has complete faith in his queer craft, and intends to

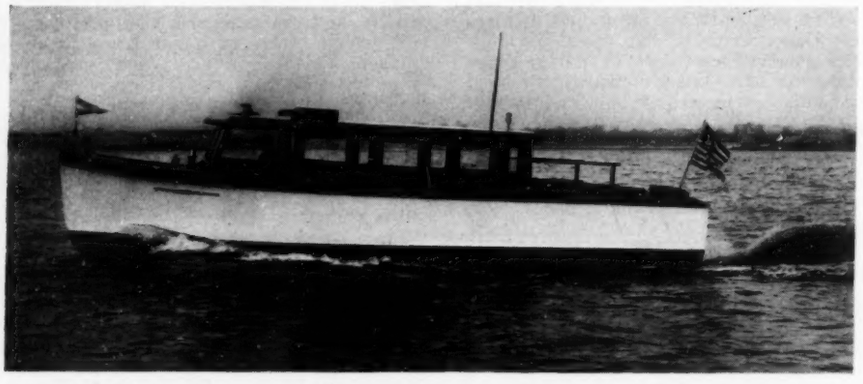


This 55-foot cruiser has given her owner, Mr. H. Barber, a season's excellent service. The Buda M. A. N. Diesel with which she is powered functioned perfectly.

make a Transatlantic crossing in her during the coming summer.

Buda's Fine Performance

A fine performance has been recorded during the past season of a Buda M. A. N. Diesel motor in the handsome 55-foot cruiser



A special Wheeler Playmate designed and built for the use, in Mexico, of the Anglo-Mexican Petroleum Co. She is a 29-footer, heavily constructed, and is driven at 23 m.p.h. by a 150 h.p. Scripps.

owned by Mr. H. Barber. After a long and arduous season, it was found that there was no cost whatever for maintenance and repairs; fuel injection nozzles required no cleaning whatever; the engine never failed to start instantly; no soot or smoke ever came out of the exhaust; the fuel consumption was only 5 gallons per hour, using 28 — 30 degrees Baumé oil; consumption of lubricating oil was unusually low. The whole performance was one of the most satisfactory recorded for a light weight, high speed Diesel motor.

Speed and Slip

Many outboard racing drivers are at a loss to know what the theoretical speed of their boat is at certain "revs." of their motor, and what the slip of the wheel is. These questions may now be answered quickly and with certainty. The Cross Gear and Engine Co., 3258 Bellevue Ave., Detroit, Mich., has just issued a series of tables and charts which give this information at a glance — any engine speed up to 6000 r.p.m., and any propeller lead or pitch up to 20. There is also a simplified formula for computing any speed not handled by the tables. Write to the Cross people, send a self-addressed, stamped envelope along, and mention YACHTING — and the tables are yours.

Stop Leaks

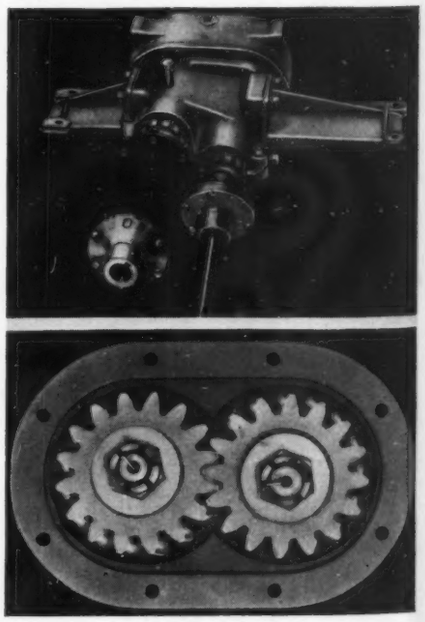
An unending warfare has been waged between man and water. Man wants to keep water out of his boat; water insists on coming in through any weak spot. Primitive man used baked clay; his grandchildren used the sticky juices from certain trees. Noah pitched the *Ark* within and without. Moderners have used this and putty, beeswax and white lead. Today there is no longer need to be bothered with a leaky boat; if you want dry bilges, there is some quality of marine glue which will cure the most stubborn leak. Write to L. W. Ferdinand & Co. for a copy of their latest booklet, *Weak Spots*, which tells all about the leaks to which the average boat is subject and the best method of making a permanent cure. A copy is yours for the asking.

The Gray Vee-Drive

The accompanying illustration shows the simple, sturdy, clean-cut construction of the new Gray Vee-Drive, as used this year in Dee-Wite and Aco runabouts. It is a particularly rugged unit, there being only eight moving parts, four of which are heavy duty, over size ball bearings. It is manufactured for the Gray Marine Motor Co. by the Timken-Detroit Axle Co., and is perfectly noiseless in operation. That it is highly efficient is proved by the fact that in a Dee-Wite runabout powered with a Gray high speed "8", it promoted a 42-mile speed, faster than the same motor would drive the same hull with motor installed amidships in the usual manner. Port and starboard gears are available for twin installations, and full dimensional drawings will be supplied to YACHTING readers by the Gray Motor Co., 6910 East Lafayette st., Detroit, Mich.

Sentinels of Silence

The Maxim Silencer Co., of Hartford, Conn., who have been building silencers for gasoline and Diesel marine engines for the past ten years, have just published two colorful pieces of printed matter of interest to yachtsmen. The first is the May issue of their magazine, The Maxim Silencer Magazine. The second is a brochure, Maxim and the Mariner, or The Sentinels of Silence Go to Sea, which is completely enlightening on the all-important subject of efficient silencing of the engine exhaust. Either or both of these publications may be secured by writing to the Maxim Silencer Co., Hartford, Conn.



The new Gray Vee-Drive which is used this year in Dee-Wite and Aco runabouts.

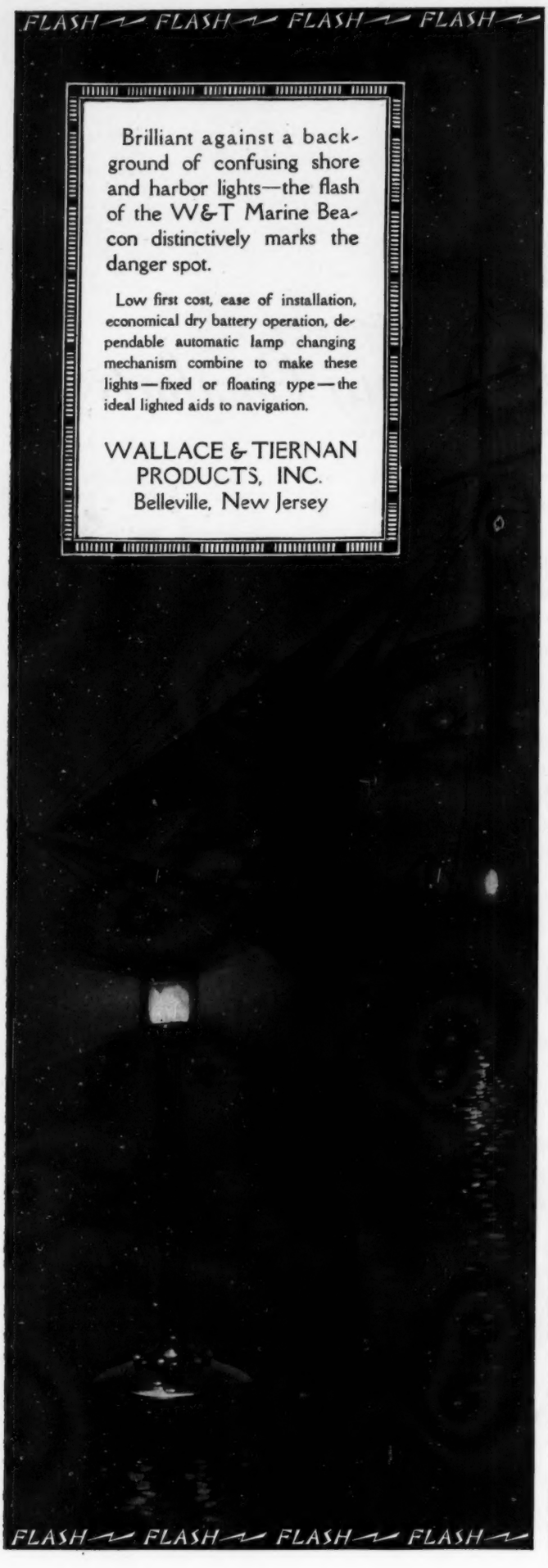
HERE'S SPEED
COUPLED WITH SAFETY - - -
And Rare Cruising Comforts

The increasing number of Robinson Seagull Cruisers and Commuters at yachting's smartest rendezvous is inescapable evidence of their acceptance by men and women who supply the social and financial background of the nation. Custom built to standardized design, Robinson Cruisers and Commuters provide a singular motive for such discriminating acceptance by their exceptional characteristics of speed, coupled with safety and rare cruising comforts. Never built to a price, the shrewd buyer can none-the-less appraise their outward beauty and renowned performance by the standards of value which his own experience evokes. Three tried and tested models are available: The smart 39-foot Seagull Sedan Cruiser, with speeds from 32 to 45 miles per hour . . . the 40-foot Seagull Speed Cruiser, either single or twin screw, powered for speeds from 28 to 38 miles per hour . . . the Seagull Custom Commuter, in single or double cabin design, with twin screw engines to provide a 40-mile top speed. Prices and full details on request.

ROBINSON *Seagull* CRUISERS

Knowlton L. Ames' new 45-foot single cabin Seagull Custom Commuter is twin powered to do 40 miles per hour

ROBINSON MARINE CONSTRUCTION CO. - - BENTON HARBOR, MICHIGAN


FLASH FLASH FLASH FLASH
Brilliant against a background of confusing shore and harbor lights—the flash of the W&T Marine Beacon distinctively marks the danger spot.
Low first cost, ease of installation, economical dry battery operation, dependable automatic lamp changing mechanism combine to make these lights—fixed or floating type—the ideal lighted aids to navigation.
WALLACE & TIERNAN PRODUCTS, INC.
Belleville, New Jersey
FLASH FLASH FLASH FLASH

Yacht Diesel Power of Today

(*Continued from page 58*)

very remarkable speed of 2000 r.p.m., which I believe is faster than any other oil engine. The new unit has been developed for yacht and cruiser work, especially for engine room generator drive. In general design it follows closely the most recent automotive practise, and is equipped with electric starting motor and battery charging generator. There is governor control for extremely close limits, in addition to hand throttle for immediate and remote control. It has a bore and stroke of 3½ inches by 6 inches and develops 40 b.hp. at the 2000 r.p.m. speed. It can be connected with 10 to 20 kw. generators, or be equipped with reversing gears when required for direct-drive propulsion of motor launches and cruisers. Its weight complete is only 800 lbs., or 20 lbs. per horse power. Space forbids a complete description, but the inception of this remarkable little engine makes it possible for the yachtsman to completely Dieselize and electrify his boat within the weight and space limits heretofore accomplished only by the gasoline motor.

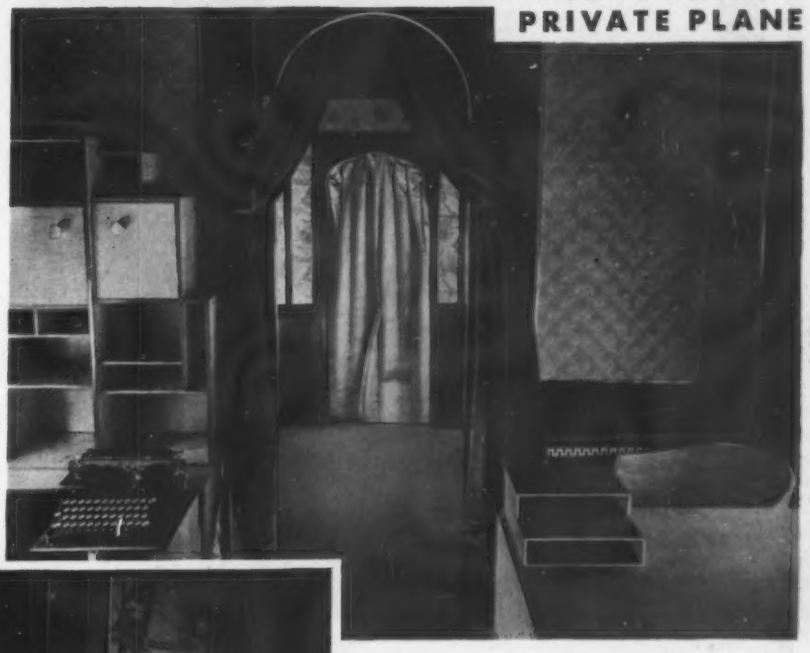
Also following automotive practise is the Buda Diesel, originally designed and developed in Germany, and now produced in Chicago. One model has an output of 173 b.hp. at 800 r.p.m., or 180 b.hp. at 1000 r.p.m., from six 6½-inch by 8¾-inch cylinders. It is equipped with a reduction and reversing gear having a ratio of 2½ to 1. Of the airless injection type, it is electrically started, no compressor being required. All moving parts are completely enclosed, giving quiet operation. One feature of the design is that each cylinder is fitted with two injection nozzles, one on each side of the head. Fuel of 26 to 38 Beaumé can be used.

In developing the Standard Diesel engine from its earlier heavy-duty stage to the requirements of the modern yacht engine, the tendency has been to increase piston speeds, and the designers have gone as high as 1500 feet per minute with engines of 10- and 12-inch bore. At the same time the length of the engine has been cut down by increasing the diameter of the crankshaft, and thus providing extensive bearing surface, and creating maximum rigidity of crankshaft. This, of course, greatly helps to eliminate any torsional vibration condition. From exhaustive shop tests it has been found that the mechanical, or airless, system of injection, using indicated pressures of 115 to 120 lbs., can be allowed, and a clear exhaust still maintained. Pulverization and distribution of the fuel can be accomplished so thoroughly within the available short space of time that a greater percentage of the oxygen within the chamber is consumed than generally conceived possible or practical. It is the Standard designers' belief that Diesels of the near future will utilize mean effective pressures much higher than those found today.

So well is the Winton engine known in yachting circles that it is hardly necessary to say that its makers have played an important part in the development of the high-speed Diesel for luxurious floating homes. Every year for the last dozen years I have visited the Winton plant at least twice, and it has been intensely interesting to watch the continual advance in design. The very latest Winton engineering creation is a 16-cylinder, 8-inch by 10-inch, Vee-type, four-cycle model turning at 750 r.p.m. and developing 650 s.hp. Completely enclosed in construction, it is one of the cleanest pieces of workmanship in the history of the Diesel engine. Its weight is 18,500 lbs., or 28½ lbs. per horsepower, while its over all length, including thrust-block, is 18 feet. The block for each set of eight cylinders is cast integral of chrome nickel iron, and is mounted on an aluminum crankcase in one piece.

This Triumphant Achievement of Modern Aviation

F32 FOKKER PRIVATE PLANE



LUXURIOUS AND SMART WITH SCHUMACHER FABRICS

A PRIVATE OFFICE in the air! Decorated with Schumacher Fabrics in gray and red. Wall panels, modern gray damask. Panel borders and portières, light-weight red silk velvet. Ceiling, silver rep.

Seen through the office door is a sleeping compartment. By using Schumacher Fabrics throughout for decorating and upholstering—just as they are used in the home—a sense of luxurious comfort is achieved. Panels, modern French damask in gray and Copenhagen blue. Blue silk velvet borders the panels and curtains the berths. Couch covers, blue and gray striped frieze. Ceiling, blue rep shot with gold. Portières, tan satin.

(Below) In the smoking room two of the comfortable armchairs are covered with a rich red and tan tapestry; two with a modern tan tapestry.

Schumacher collections include modern designs side by side with adaptations from the past.

"Fabrics—the Key to Successful Decoration". . . This booklet will be sent free upon request. Planned to help those who wish to know decorative uses of fabrics, but have not the time to make a deep study of interior decoration.

F. Schumacher & Co., Dept. S-6, 60 W. 40th St., New York, Importers, Manufacturers and Distributors to the trade only of decorative drapery and upholstery fabrics. Offices also in Boston, Chicago, Philadelphia, Los Angeles, San Francisco, Grand Rapids and Detroit.

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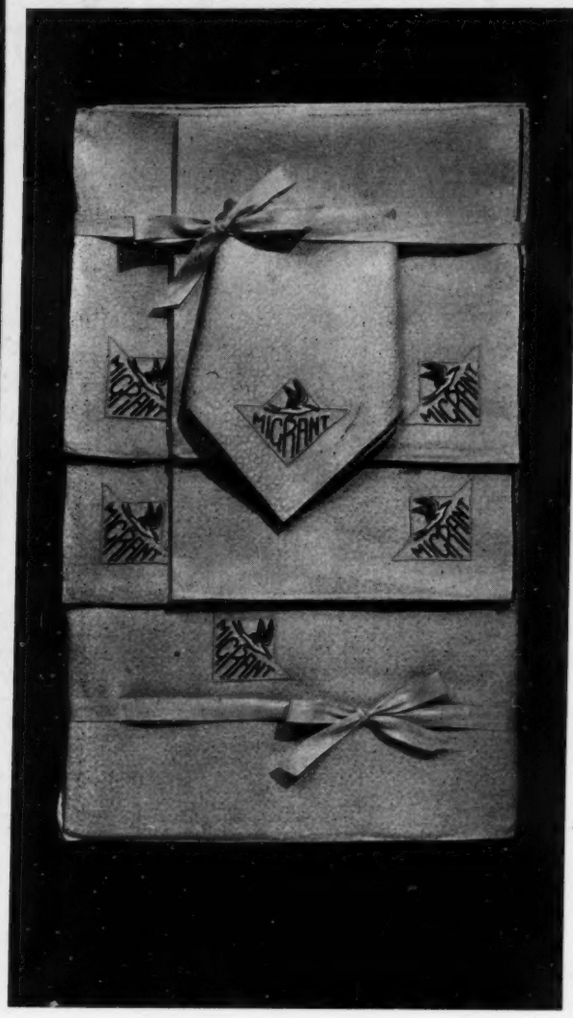
MOSSE
INCORPORATED

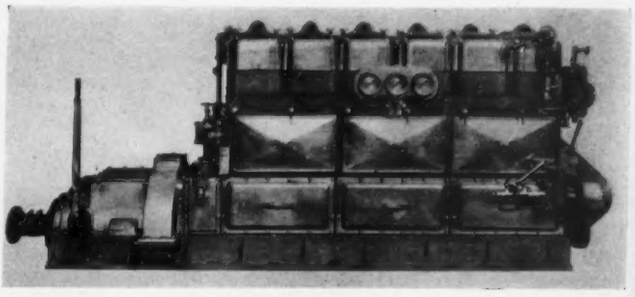


ABOARD many of the finest craft assembled for the Cup Races will be found yacht linens by Mosse—always distinguished for their originality and good taste.

750 FIFTH AVE., New York
Just above 57th Street
SAN FRANCISCO: 478 POST STREET
SPECIALISTS IN LINENS

When one tries to compare this design with Winton Diesels of eight years ago the two seem to have nothing in common. Yet at that time Winton occupied much the same high position in the industry as it does today. The old model illustrated weighed 22 tons, or more than double the weight of the "Vee" engine, which develops over three times the power, and this on a greater length of only about six inches. Many of the remarkable improvements in mechanical details of construction are obvious at a glance.

When it comes to engines of smaller sizes just as much headway is apparent as in the higher power units. Another such example worthy of comment is the Cummins, which some months ago crept on to the front pages of the daily press by propelling an automobile from



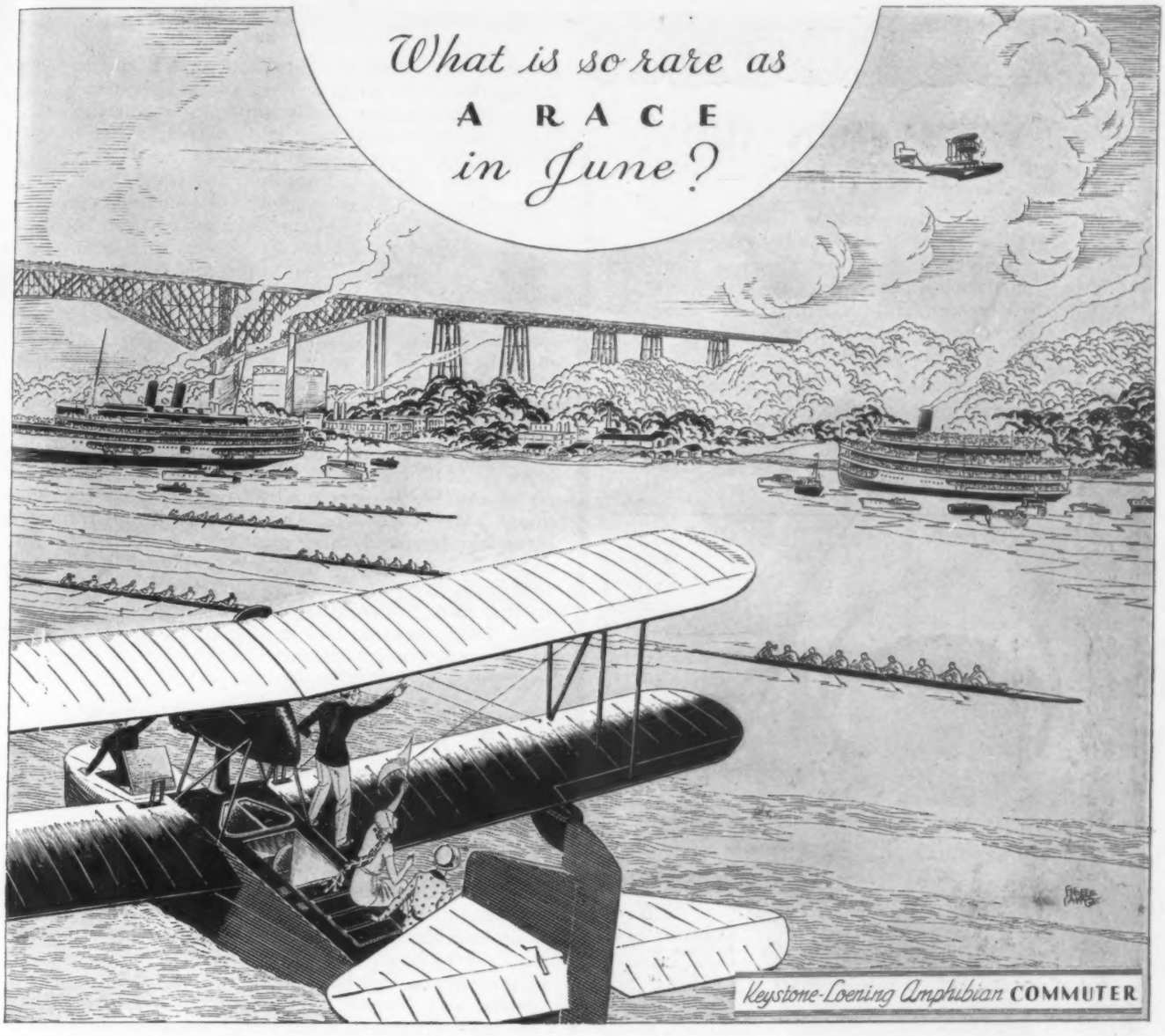
An unusually refined and neat Diesel is this 6-cylinder yacht engine, built by the Atlas Imperial Engine Co. on the West Coast.

Columbus, Indiana, to New York at 31.7 m.p.h. average speed, with a fuel bill of only $1.38.

The marine model put out eight years ago developed 55 s.hp. at 700 r.p.m. on a weight of 3900 lbs. from four 5½-inch by 7½-inch cylinders. For starting there was a small air compressor mounted on an arch casting over the reverse gear. Smaller bore and shorter stroke in the latest, lightweight, high-speed model produce 60 s.hp. from six 4½ by 6-inch cylinders at 1000 r.p.m. on a weight of 2900 lbs. Starting is by electricity, there being a 32-volt combination lighting-and-starting unit mounted over the reverse gear where the air compressor formerly was located. Among the modifications may be mentioned a new distributor fuel pump, having but one plunger and no valves, calculated to ensure even distribution of fuel to all cylinders at varying loads. Fuel consumption economy and freedom of clogging of the injector nozzles have been secured through the introduction of an improved "outer" injector cup, which avoids the need of cleaning the orifices. Within the next few years the Cummins engineering staff anticipate having ready an advanced design of Diesel engine which will operate from 1500 to 2000 r.p.m. on a very light weight.

Differing from other American oil engines of today is the Kahlenberg, in that it is of the low-compression, two-cycle crankcase scavenging type. Instead of changing the principle of operation, Kahlenberg engineers have preferred to confine themselves to refinements of mechanical details. Mainly, their engine is of the heavy-duty type, but quite a number have been installed in pleasure craft. Many owners still prefer a comparatively slow running engine. In fact, one yachtsman, A. L. Foster of New York, recently installed one of their 120 s.hp. at 375 r.p.m. engines in the *Cachalot* in conjunction with a Morse reduction gear, so that the propeller — a five-footer — turns at about 125 revs.

Conclusion of this review should not be made without reference to the exhaustive research work carried on during the last six years by William Butler, of Indianapolis, developing aluminum pistons for high-speed Diesels. He has accomplished some splendid results in collaboration with leading engine manufacturers.



THE BANKS are lined with cheering crowds. The river's gay with boats. Down the lanes dart the racing eights in their four mile spurt for fame.

Some will see it from a chugging train. Some from the decks of yachts. But many keen sportsmen will see it all—race, crowd and glorious setting—from a cool vantage point of their own.

Anchored along the course, in their Commuters, they will save hours of tiresome travel to New London or Poughkeepsie. In this sport amphibian they will be free to alight at will on land or water, to flit among the yachts or anchor along the sidelines. And when the great race is won and dusk falls upon the river, they will rise once more into the sunshine, Manhattan bound for revelry.

You who have rowed in racing shells will thrill as you skim the water in this winged boat. You will admire the trim lines of its metal hull, the smart appointments of this cabin built for four. You will appreciate, too, the sturdy construction of this shipshape craft by the foremost designer of amphibians—Grover Loening.

Listen to the perfect rhythm of the 300 H. P. Wright Whirlwind motor as she speeds you through the air at 90 miles an hour. Raise the beat and she spurts to 105. Here is power and endurance—and the reserve that wins.

Want to captain a Commuter at the June regattas? Just say the word and we'll take you for a trial spin with an able coach and a skillful cox. Phone, wire or write for appointment to Dept. C-16.

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SEXTANTS—

We now have our new *"Boston" sextant* available for immediate delivery. Specially designed for your use, large mirrors, clear cut graduations. Each instrument complete with certificate of accuracy and polished mahogany carrying case.

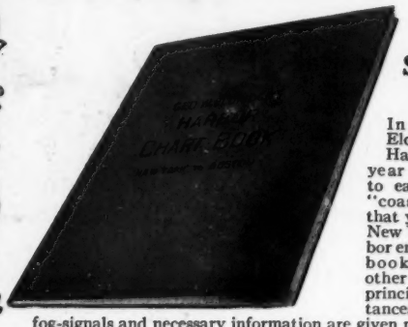
Plain tangent type $75.00
Special endless tangent type $90.00

Never before equalled either in quality or price.

SEND FOR CIRCULAR

OUR NEW 5″ TELLTALE COMPASS

Can be hung from bulkhead or deck. Specially designed for steadiness. Can be read from below, or above. Electric Light with push button attached if required.



SOMETHING NEW

In publishing the Eldridge Books of Harbor Charts this year we have added to each book several "coasting" charts so that you may go from New York to Bar Harbor entirely with these books and without other charts. All the principal courses, distances, buoys, lights, fog-signals and necessary information are given plainly and ready for immediate use.

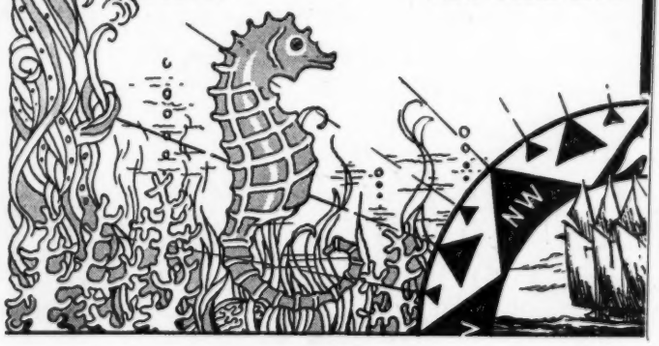
No. 1 Book — New York to Boston.....$20.00
No. 2 Book — Boston to Bar Harbor.....$15.00

BOUND IN STIFF CANVAS COVERS

These books make a unique and useful present to the friend you cruise with

KELVIN & WILFRID O. WHITE CO.

112 State Street BOSTON ★ **38 Water Street NEW YORK CITY**



Adventurers All

(*Continued from page 64*)

uncomfortable time of it and was once bothered by his old enemies, the whales. They played about the boat, much to his dismay, for a tap from one of their huge flukes would have put an end to the *Sapolio* in short order. His first night in port was almost disastrous, for his 5-pound anchor did not hold and the *Sapolio* almost dragged ashore. He got a great welcome and reproduces in his book a number of certificates, invitations, and so on, given him by the Spanish authorities. The boat was shipped back to the United States and was inspected by thousands at Chicago the following summer.

For the next few years he stayed ashore and made a lot of money exhibiting himself and his boat and spinning the yarn of his adventurous voyages. But he spent as freely as he made and illness took its toll of his energy. At last, after a long sickness, he married again, selecting the trained nurse who had cared for him so faithfully. With her he began another Atlantic voyage, sailing from Atlantic City on October 6th, 1901, in the *Flying Dutchman*. She was spoken by an inbound steamer when about a week out. Mrs. Andrews was ill, but refused to leave her husband, and they were never heard from again. As a severe gale was threatening when they were spoken, it is presumed that the little boat foundered. At any rate, the Massachusetts courts, on September 10th, 1902, declared him legally dead and issued letters of administration to his son Horace.

(*To be continued*)

Wander Bird and the Blue Waters

(*Continued from page* 86)

mass close ahead to port first alarmed us and we came about quickly, to discover that the object was the southern jetty, a long, low affair of rock without any light. Thus reassured, we again steered into the cut, picking up the unlighted northern jetty and steering by compass for the black buoys we had to leave to port.

I was at the wheel, Al Paine, consummate seaman, was my bow lookout, entrusted with conning the ship. He picked up the first buoy and ordered "Hard-a-port." I obeyed and *Wander Bird* edged quickly to starboard. The buoy appeared on our port bow. We were passing it with 15 feet to spare. Suddenly, the ship took the ground. The buoy bobbed ironically to us, ten or twelve feet to port.

Our salvage efforts were a failure. Our kedge anchors, one of 150 pounds and the other a 200-pounder, both came home and fouled under some immovable object. We lost them both. The strong current in the cut and the easterly wind drove us steadily on to the rocks.

The ship pounded heavily all night, but kept tight and broke nothing we could detect. We were alarmed enough about her, however, to start shifting ballast at three in the morning. Barbara and Joseph emptied the water tanks. The rest of us took ballast from under my cabin and stacked it in the galley. We got the anchor chain up forward of the winch. A charter sailing boat skippered by Captain Starn, a tug and a gang of cheery Coast Guard boys in a 75-footer got us off next tide, and I was never so glad before to feel the ship alive under me. We had passed a bad night.

Wander Bird, thanks to herculean construction, came off the rocks without even stripping away a sheet of copper. She is as tight as ever. After a busy year she seems content to linger here, with her sails and running rigging sent down, opposite Miami skyscrapers, listening to the bands and watching with a matriarchal air the antics of airplanes, dirigibles and speedboats. It is a pleasant place to end a good voyage!

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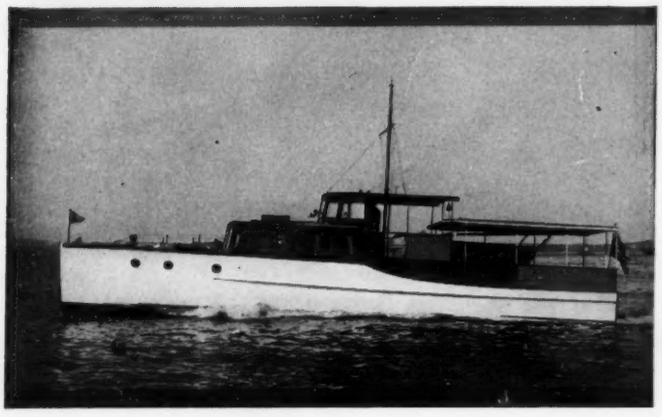

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Maitenes Makes Her Maiden Trip

(*Continued from page 88*)

complete with yachting cap, in order to point a moral and adorn a tale. They worked — how they worked! Nothing was too much trouble; too much exertion. The Bo's'n, arriving hot-footed from Havre, spent his days aloft, securing chafing gear to cross-trees and shrouds.

We laughed, cursed, sang, shouted; we were mistaken for paid hands and boatmen plying for hire by exacting trippers; but the ship settled into trim, became seaworthy and started to find herself. "Stick this, and you'll stick anything," the major would shout, and his torpedo beard, bristling at the skies, quivered to low, deep chuckles.

Despite all our efforts, we had to sail for Cowes with our racing sails almost unstretched, but the run up the

"Our crew, which was nearly always the same," Jerry, the Skipper (at the helm), Kirkpatrick, the Bo's'n, Graham, the Colonel, and the Major.

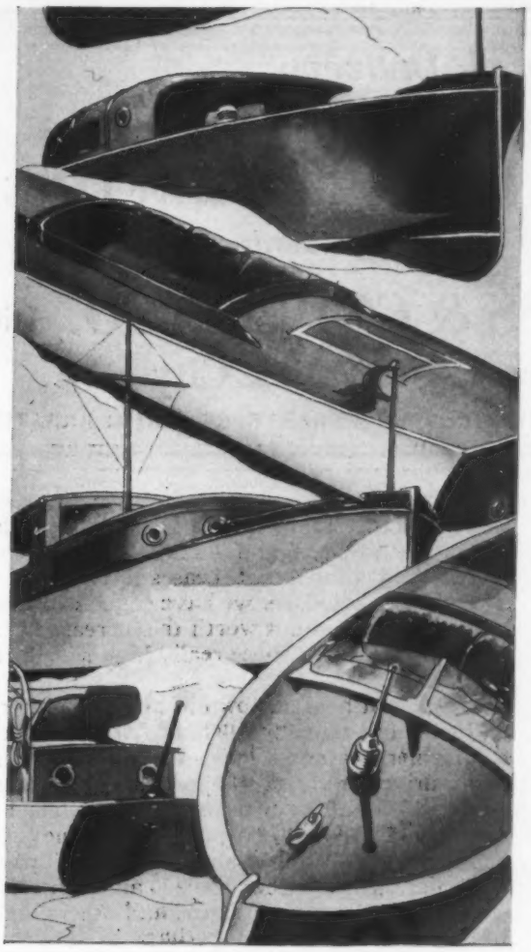
coast sent them working towards their mark, and the light weather to the Lizard, during the race, saw them fully out. That she could travel we had no doubt, for one hour we logged ten knots off Portland Bill and then had to put in to Studland Bay to tighten our girder stays aloft. When we reached Cowes we saw the fleet at anchor and learned they were anxious about our stick — lest, perchance, we should hold to it.

"A nice, short jump off the Longships," said one, "and you'll whip it out of her."

"Make it a bet?" we asked; and the subject was changed. But when a well-known critic described her in print as the most ridiculously over-masted ship he had ever seen, we became enraged, for a 70-foot mast, well stayed, is far from excessive.

That she had speed in light weather was proved at the start. We ran through the fleet for a short time, though *Saladin*, close inshore, overhauled us with a better tide; and close-hauled, till our jib hook parted, we found ourselves pointing higher and eating away to windward. We held an inshore course, working our tides, but failing, owing to a temporary perversion of the wind, to carry the ebb around Start. Four precious hours were lost here, but at the Lizard we were only an hour-and-a-half astern of *Neptune* and an hour astern of *Jolie Brise*, with an hour gained on *Saladin*, who had made her westing offshore, and to whom we had to give nearly two hours. Whether we gained or lost by taking the inshore course is hard to say. *Saladin* is amazingly fast in light weather, faster than *Jolie Brise*, I understand.

Then a freshening wind swept down, headed us off, and started to blow hard. We hauled away on the starboard tack, surmising, in the face of a dropping glass,



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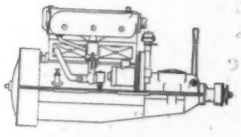
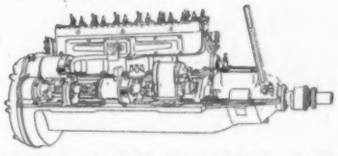
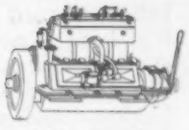


P. A. L. 4-cyl. 25 H. P. at 1200 R. P. M.



P. B. 6-cyl. 40 H. P. at 1400 R. P. M.

Green Witch 6-cyl. 150 H. P. at 1400 R. P. M.



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that the wind must back. Before dark we were close-hauled and fore-reaching in a high, broken, crested sea. It took us ten hours to realize that the wind had deceived us, though one's object in a new boat should always be to reach sheltered waters in order to ease the gear. Had we held on we should have gained the difference, at least, between those hours of easy fore-reaching, and of hard sailing in sheltered waters. We could never hope to beat *Jolie Brise* in that weather, but we might have slipped into second place instead of fourth without much difficulty. And from the time we reached sheltered waters difficulty vanished. A light beat to the rock sent us running home in easy weather, alternating with patches of light airs and calms.

None of us had sailed in a Bermudian-rigged boat before, and we were ignorant of the subtleties of the rig. Our mainsail was a bad set, the tension of our shrouds was wrong, and the wire itself was settling home the whole time. Unable to reach the rigging screws of our girder stays in the jump to the Fastnet, we were forced to sail her easy and nurse her like a delicate child. That the mast stood, as the designer said, was a lasting testimonial to the rig — to a rig that, by its performance belies the cant of casual criticism.

A boat is never finished till a year has elapsed since she was built, and we are already at work to improve her. If expense were no object, the task would be easy; but expense is a vital consideration. We are still arguing. Gaff rig has been proposed — and rejected. We thought of cutting her mast and turning her into a sloop-cutter with one big headsail and a series of jib topsails, but this necessitates keeping the whole weight of the mast on the bowsprit. We are also considering ways and means of fitting a hollow spar, and of its capacity in really hard weather. The weight saved aloft would be enormous and we should keep to the same height. The boat is, after all, on the small size for the race if heavy weather predominates, and it seems as if her rig should be such as to take advantage of light and moderate weather — up to a point. And that point ceases before the large fore triangle is reached, for we have concluded that the extra sail area gained is not worth the increased tax in rating: one can only carry these really high sails in the lightest of breezes.

We cannot hold our own in heavy weather with ships of double our tonnage, such as *Jolie Brise* and *Neptune;* the former has again been improved; the latter, when really driven, will be, perhaps, the most dangerous rival of all. Both these ships are now capable, I believe, of giving *Niña* the finest run for her money she has ever had; and though it is asking much for ships to cross the Atlantic, the Santander Race is an additional incentive.

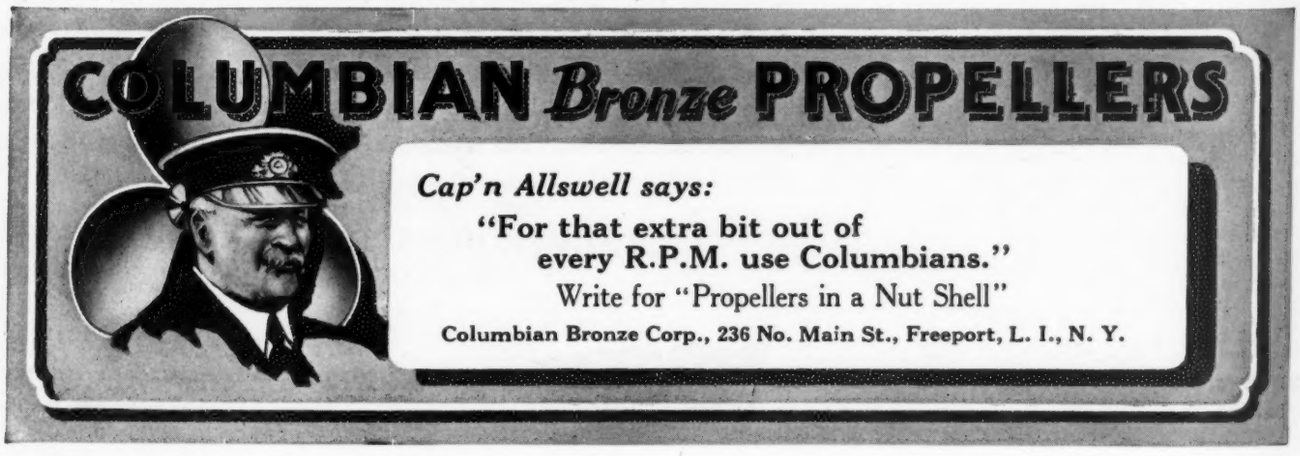
Niña, *Neptune*, *Jolie Brise*, and others, fighting it out to the bitter end, with perhaps a smaller dark horse slipping in and saving her time, would surely bring joy to the gods of Olympus.

Canoe Sailing in the National Capital

(*Continued from page 79*)

With so varied a fleet it might be thought that stringent and complicated rules would be necessary to offset differences in hull structure alone, but so far this has proved unnecessary, there having been plenty of well bunched finishes. When a matter of seconds separates the leaders it is anybody's race. At some later date, when the club has materially increased its membership, it will undoubtedly be necessary to enlarge upon the present simple set of rules as to sail area and so forth, but until this becomes necessary complications will be avoided.

Plans for the coming summer call for the regular Sailing Club Regattas, one in the fall being the annual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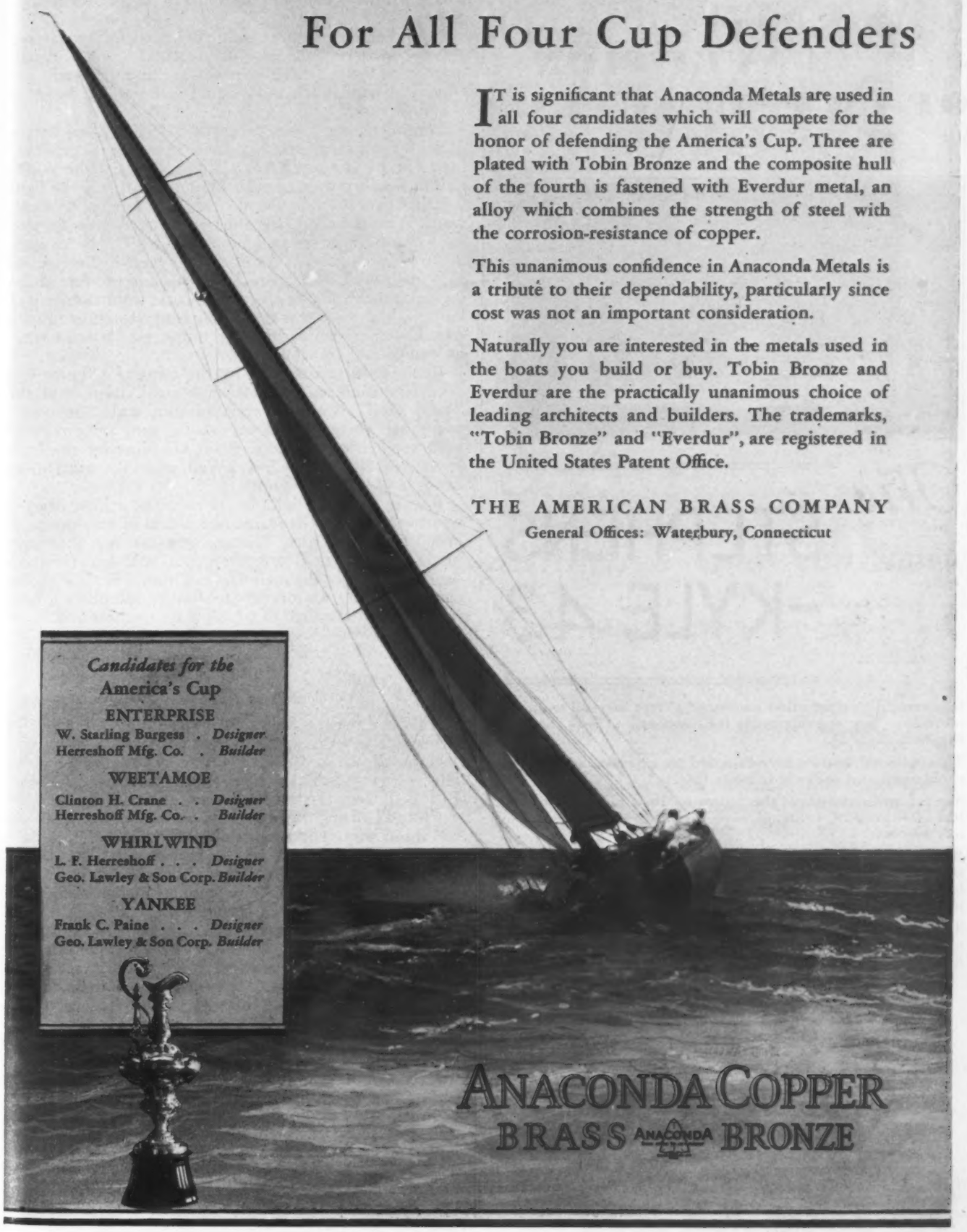

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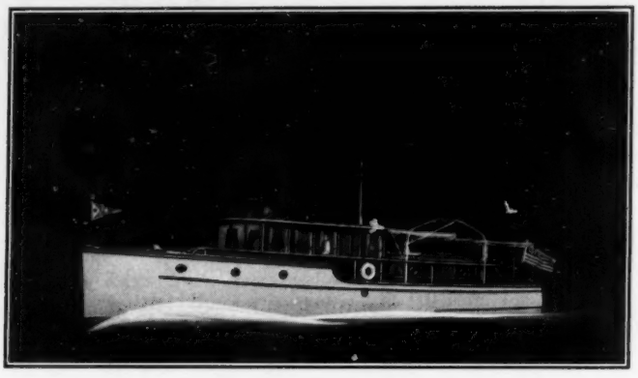

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championship; and in addition there will be a series of informal Saturday afternoon races, from three to six or more miles in length, beginning on the first Government half-holiday and continuing through the summer on each alternate Saturday. Several prizes have been provided for the high point winners in these informal races which will be scored apart from the regular formal regattas.

It has been a long time since the sailing canoe claimed popular favor as "the poor man's yacht," but in Washington, at least, these trim little thoroughbreds are staging a come-back that would gladden the heart of the most pessimistic old-timer.

The initial outlay may be materially reduced by refitting a regulation paddling canoe; that this is practical is proved by the fact that the greater part of the Washington fleet average four to five miles an hour in light weather over a triangular course, with one leg to windward. With the wind free, the better canoes average well up toward six or seven miles an hour. Thirty to sixty dollars buys a good 17 foot canvas-covered canoe; a like sum fits it with sails, spars, leeboards and rudder; camping equipment of a practical sort costs from twenty dollars up, and your canoe sailor is ready to enter upon a paradise unknown to speeding autos, sign boards, tourist camps and tin cans.

Replacements are made by the owner for the cost of necessary material; storage is a small item, and the "paid hand" is also "owner, master, mate and cook's assistant" to quote the words of a song once popular with small boat boosters. Fuel? Gasoline for the little stove, yes. But for the boat? Well, when the wind fails a canoe is not hard to paddle.

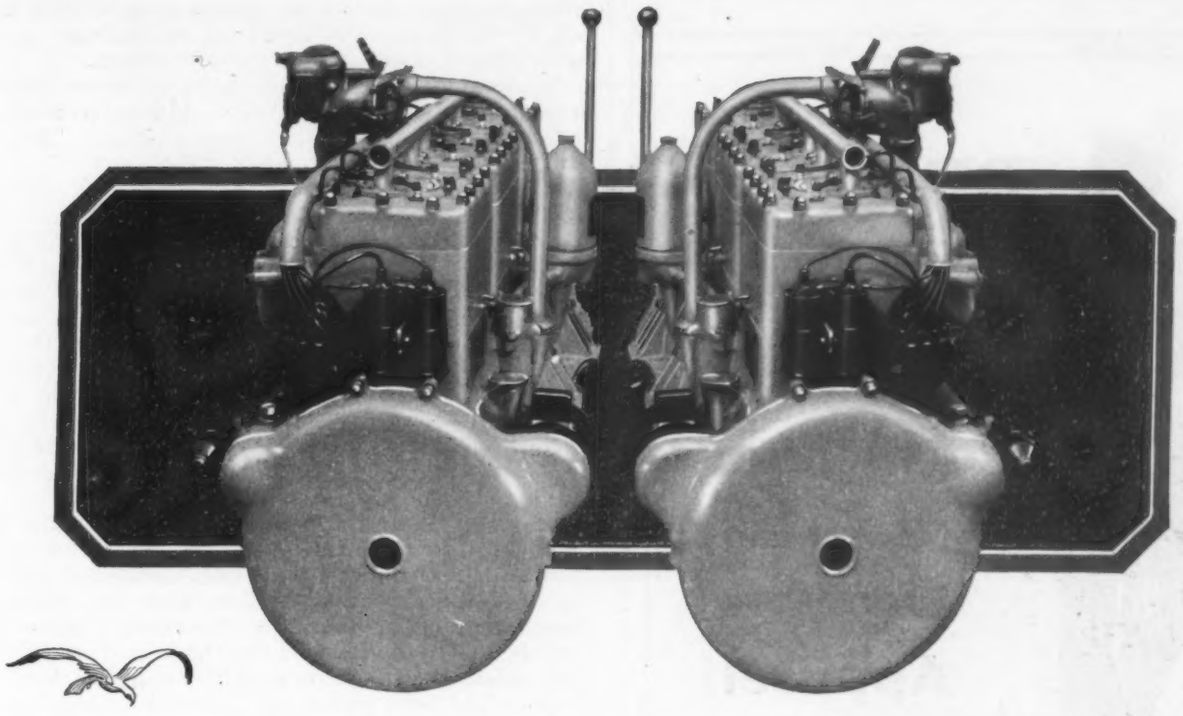
Racing in these light boats requires a long head, a weather eye, an agile frame and a deal of experience. It is sport of high order. The sailing canoe is a thoroughbred — high strung, temperamental and sensitive to a degree — but for the man who can humor her and appreciate her really wonderful capabilities she offers a form of recreation the love of which is its own reward.

Grey Treasure of the Sea

(*Continued from page 71*)

I could see the big flukes gleaming under the water on either side as we passed between; then we slid along past their smalls up to the hump of the left one. When about ten feet away from his side: "Into him there, Grant!" Biff! Biff! went the two harpoons and overboard the box warp and I swung the boat off to clear his jaw if he should roll it our way. The whale on the right roused and went down in a hurry — the last we saw of him!

Not to weary the reader with too much detail, we were all the rest of the day killing our fish and it was dark when we had him secure alongside the ship and everything snug, all sails but the two lower topsails furled. Meanwhile the wind had freshened considerably and hauled into the northwest; it seemed best, therefore, to drag the whale into the southwest a little. So we braced the fore topsail forward on the starboard tack (instead of laying with foreyard aback and drift as usual), and all hands but the helmsman went to supper. Supper over, I came on deck at once and in order to see how the whale was towing went to the gangway in the waist. This was a place where a section of main rail and bulwark had been removed almost level with the deck, and as I stood there looking down at the whale (you will remember that it was after sundown), I noticed a small dark object bobbing up and down in the swirl alongside. At that time we carried two little ship's dogs, one a Scotch terrier, the other a black and tan, and my first thought was that one of them must have



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fallen overboard. So seizing the old long handled scoop net, I tried to pick the object up, but without success, for it jumped about in a very lively fashion.

At this point Mr. Cook and the other officers gathered around to watch the proceedings, and after them trotted the two little dogs. So they were all right. "Must be driftwood," I said to Mr. Cook.

"Maybe so, sir," said he, "but we don't often see driftwood hereabouts. I think I'll take a look at it." I passed him the net and went aft to see how the ship was heading and when I returned he had the lump aboard and was examining it carefully. "Old bark, sir," he said, "smells bilgee, too. The old *Splendid's* bottom must be falling out," and he drew back his arm to heave the piece overboard. But by this time (luckily for me and the rest of the crew) I had begun to have a suspicion of the truth and shouted, "Smells bilgee, does it? Hold on there, HOLD ON, let me have a look at it." He passed it over and by the look and smell I knew at once that it was ambergris.

"Square the foreyard now and let the ship drift; have the stage rigged out, set boats crew watches and a man with a scoop net at each end. Look sharp and pick up all you see floating!" These were the orders that rang out in rapid succession. Never were orders more swiftly obeyed, and by the time night had settled down and made it useless to search any longer fifty more pounds had been picked up. There is little doubt that the combination of rough sea, towing, and bumping of the whale against the side of the vessel had forced out the fragments.

There was plenty of excitement and high talk aboard that night and no growling was heard when the call to breakfast came before 3:00 A.M. Cutting in was started before the first streak of cold gray appeared in the east; at five the head was off and we began preparations for rolling in the blanket pieces from the body. Now began a dissection which probably has never been equaled before or since, both as regards the size of the "subject" and the "findings," for I was determined to satisfy my own curiosity as well as explore him thoroughly. So we started "rolling in," slicing off four ribs just abaft the side fin and raising them on the blanket piece. No ambergris there, only lungs and heart, but, oh, what a mighty heart, as big as a fifty-gallon barrel! Now we hove in the eight-foot wide blanket piece, thereby rolling the whale over and made another opening raising a section as before. This one contained the gigantic stomach; we opened it up — nothing there that we wanted — rolled him over again, made another cut and this time found the entrails and the main canal leading to what we whalemen called the "fundament." It was swollen to nearly two feet in diameter and the wall greatly thickened and congested, or, in everyday English, "blood shot." One man now took his station directly in the belly cavity, double monkey ropes around him, a man to each; two others stood by with scoops, one on the rail and the one on the stage (to keep him from being washed away by the heavy seas, which broke continuously over the whale), as I carefully slit the bowel and exposed an enormous mass of dark substance exactly similar to that which we had salvaged the preceding evening.

Dark ambergris it was, semi-plastic, but it hardened on exposure to the air and broke when bent. We saved it, of course, and continued our dissection to the neskit. In this portion of the gut, scattered through the dark mass, were many firm nuggets much lighter in color and superior in quality to the main body of the mass, weighing from an ounce or two up to five and six pounds. One very large one (as we afterwards found) weighed 63 pounds. We filled a seven-barrel (220-gallon) cask with the dark ambergris; it was easy enough to handle, no stickiness or pastiness or soiling of the hands, but the

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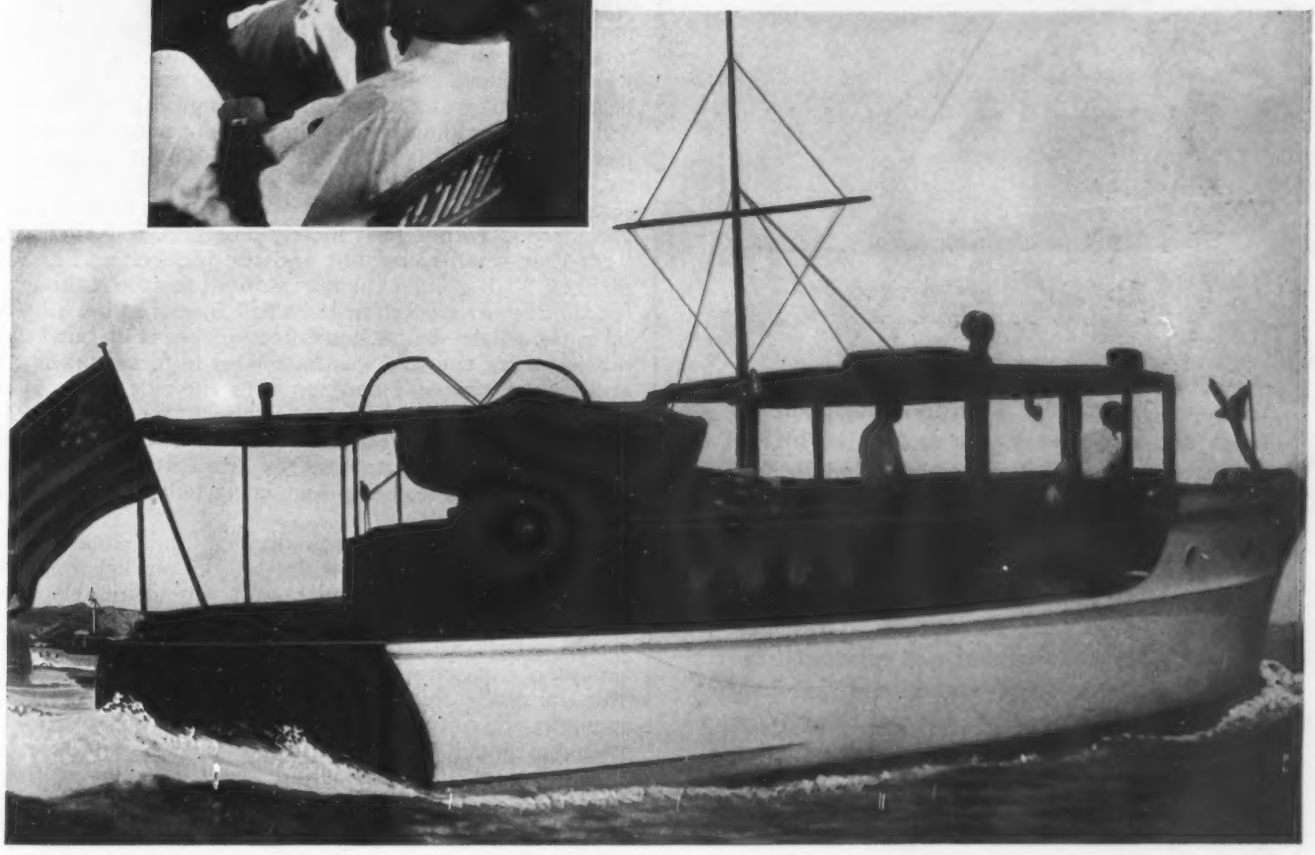

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Dawn 45-footer . . . Powered by twin-Lathrops, each 70 HP. . . . Speed 14 M. P. H. . . . $16,900 afloat at Clason Point
Dawn 48-footer Express . . Powered by twin Sterling Petrels, each 150 HP. . . {5¼" x 6"} . . Speed 20 M. P. H. . . $23,800 afloat at Clason Point

PERFORMANCE

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The "24" is the smartest — the "26" is the fastest — and the "30" is certainly the most luxurious.

Although Hackercraft are today considered the finest boats built, from the standpoint of finish and appearance, few realize the inherent integrity and wholesomeness of their design and construction. You'll discover, on closer inspection of the four Hackercraft models an impressive array of specifications not found in any other boats of comparable size and price. To begin with, genuine Honduras mahogany is used throughout and reinforced by white oak keel, stem, chines and framing. Genuine leather accounts for the beautifully groomed appearance of its cockpits. A superior number of main frames and intermediates close set to reinforce the hull above and below the chine are used. Double planked, diagonally laid ¾ inch bottoms, copper riveted to intermediates and small frames and screw fastened besides to insure the utmost ruggedness. Hackercraft also have collision bulkheads. Despite these and many other impressive advantages and additions to their design Hackercraft are by all odds the fastest boats of their kind afloat — the safest to drive — the keenest to own. Of course we'll send our catalog. Or see these boats on display.

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538 River Drive Mt. Clemens, Mich.

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1043 Commonwealth Ave., Boston, Mass
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102 New Montgomery St., San Francisco

HACKERCRAFT

AMERICA'S FASTEST SPEED BOATS

smell was the smell of the bowel content of a warm-blooded animal. And warm-blooded animals are more or less alike in that respect. The 63-pound lump already mentioned was the last. Situated just above the anal opening it must have bothered the whale a good deal. A healthy whale passes his excrement in a liquid form; when they are harpooned — poor devils — they both vomit and purge, and it's a common enough saying among whalemen that an ambergris whale can't evacuate. However, this was not the case with either of the animals mentioned in this yarn, for they both evacuated copiously when harpooned, a fact which may or may not be of interest to the student of natural history.

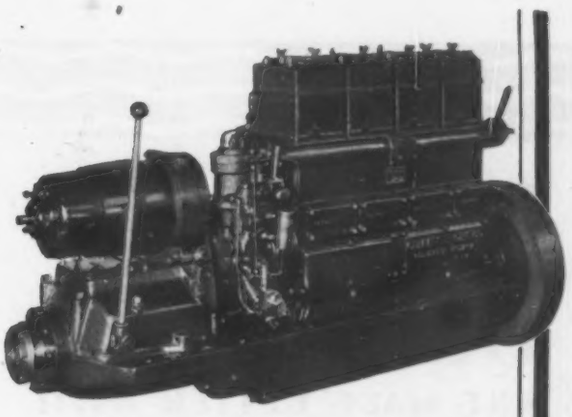
The afternoon was well advanced by the time we had divided the carcass with a last slash through the double joint, and we were glad of it, for a moderate gale and rough sea had risen and the stench, mingled with the welter of blood and blubber, had become almost unbearable. But we were not quite through. As the carcass drifted aft, bumping against the ship, out popped another piece the size of a man's head. "There's more ambergris, sir," roared the mate. There was a wild but fruitless scramble after it with the scoop nets till it drifted past the stern. "Damn the 'more ambergris,'" I shouted, "get that small rolled out and the blubber and flukes on deck." No wonder the men wanted to save it though, for that bit was worth at least $5000, more than all the oil in the whale. A boat could have picked it up but I did not lower for the gale was increasing in force, the small and flukes were still hanging over the side, night was falling over the rough sea, and I thought we had enough. Three days later after boiling down when everything was clean and ship-shape, we ran into Pitts Island again and I mailed a letter to our agent telling him of our luck.

How the ambergris was divided and packed and transported, how it almost flooded the market, how we avoided that calamity and how it was ultimately sold to the last ounce makes a long story in itself. Some of it I sold myself, a task which took me to the essential oil dealers of London and Paris and almost every large city in the United States. It had its humorous side, too. It is enough, probably, to say that the total weight was 973 pounds (though later of course the weight somewhat decreased from shrinkage), and the total sum realized nearly $150,000 in which owners and crew shared fairly according to their portion or "lay!" Better bargaining on the part of some of our agents would have increased the value, but at any rate it was a royal treasure trove.

"Good enough," says the reader at this point, "but what is this ambergris, and where's the value in it?" I cannot tell you the chemical formula (though it must be known) but my belief is that it is formed by a packing or condensing of the more solid materials of the whale's excrement around an irritant in the intestine, usually the beaks of squids. Perhaps the intestinal wall contributes a secretion, too, but I am not so sure of that. I have heard it said that it is of a "scabious nature" which I take to mean scab-like, but this I do not believe. Few men have had as good or better opportunity to observe than I, and I found no evidence whatever of attachment to the wall.

Does the ambergris make the whale sick, or is it only the sick whale which forms ambergris? Which is cause and which effect? These are questions no man can answer completely. Probably a kind of vicious circle is formed. The grey is the best and there are many grades, but it is all valuable for its marked and peculiar qualities of intensifying and suspending any odor (and very conveniently for these purposes it is soluble in alcohol). Hence its use in the making of perfumery, pastilles, incense, perfumed candles, pomatums, powders, and even wines.

2000 R.P.M. » » and A World's Record for Diesel Engines!



This Model U, four-cylinder Cummins Diesel with 4½ bore and 6-inch stroke is a duplicate of motor that set the world's speed record for Diesel-equipped automobiles.

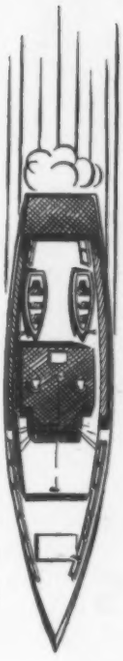
THOSE who recognize themselves as authorities said that Cummins Diesels built to operate at 1000 r. p. m. for the marine industry, "couldn't last at that speed."

So Cummins decided to prove the motor's durability. First it was run to New York, Atlantic City, Detroit and other eastern points for a total of 2,780 miles. The trip took in all kinds of roads, sub-zero weather and every adverse driving condition. Wherever possible it was run at 55 m. p. h. (1375 r. p. m.).

Next the same motor, without overhauling, was transferred to a roadster and run from Columbus, Indiana, to Daytona Beach, Florida, where it set a world's speed record of 80.398 m. p. h. To do this the motor turned at 2,000 r. p. m.!

Now it is back at the starting point after 5,380 road miles of hard driving and a speed test. Torn down, it shows no ill effects of any kind.

Cummins Diesels offer durability, flexibility, simplicity, speed, power and economy—the desired combination never before possible.



EXCLUSIVE FEATURES OF CUMMINS DIESELS

Low pressure fuel control. No fuel lines under high pressure. No high pressure mechanism to be maintained.

100 per cent pressure lubricated. Every moving surface under pressure lubrication. Withstands continuous operation. Increases life of engine. Simplifies maintenance.

Non-adjustable valveless fuel pump of distributor type insures that exactly the same accurately measured charge is being delivered to all cylinders.

Cummins patented injection system meters the fuel under low pressure, preheats and gasifies charge and delivers it to cylinder. Easier starting. Maximum economy.

CUMMINS DIESEL ENGINES

CUMMINS ENGINE COMPANY, INC., COLUMBUS, IND.

DISTRIBUTORS:

Boston: Diesel Marine Equipment Co., 40 Central St.
Baltimore: Mahon & Gall, Inc., Pratt and Gay Streets.
Washington, D. C.: Ross L. Fryer, Transportation Building.
Montreal, Canada: J. Napier Reg., 102 Aubut Ave.
Chicago: A. M. Deering, 228 No. LaSalle Street.
Harrisburg, Texas: Peden Company, Marine Branch.
Wilmington, Cal.: Johnson-Blair Co., 1024 E. Anaheim St.
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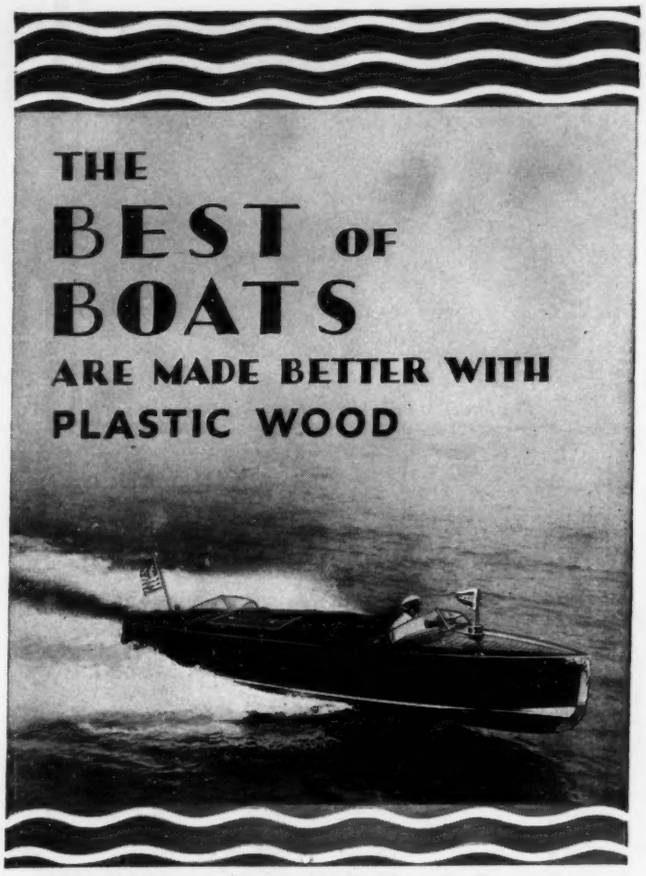

Wherever smart motor boats are seen, the Dodge stands vividly forth in its trim beauty. It has speed and staunchness—a true aristocrat of the water.

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DODGE BOATS

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Send for free 24-page booklet on Plastic Wood for Boat Repair and Construction

ADDISON-LESLIE CO., 46 Bolivar St., Canton, Mass.

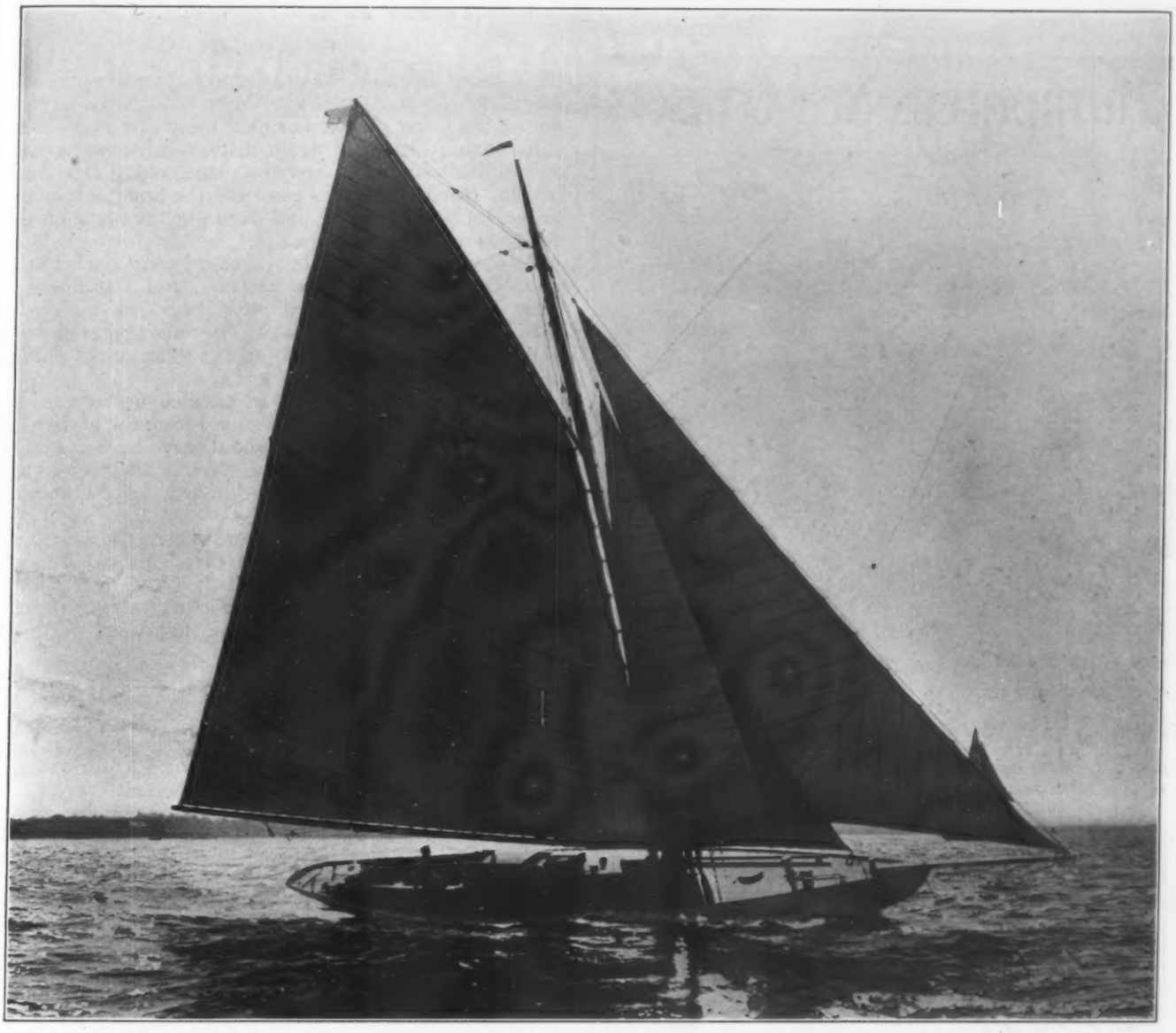
From Nova Scotia to Oyster Bay

(*Continued from page 78*)

We decided that to keep on and try to make the passage between Block Island and Montauk Point was foolish and that the best plan was to sail on and off until the fog should lift. So once more we headed out to sea! We took in the mainsail and jogged along very comfortably under foresail and jumbo. About 1:00 A.M. the next day, Thursday (June 14th), I figured that we had run off just enough to require us until daylight to sail back to a point half way between Montauk and Block Island. The fog surely should disappear by then. So we tacked ship and headed in. At 2:10 A.M. we picked up a steamer's fog signal. The fog then was just about as thick as it ever gets, and about the wettest one we had ever seen. The steamer was getting nearer. However, there was not much we could do about it except sound our own fog signal and flash a light on the sails. That steamer passed within one hundred feet of us. She never saw us, for as near as she was we could barely see the ghost-like outline of her brilliantly lighted upper decks, although we could plainly hear her engines and her bow wave. As we headed in for the opening between Montauk Point and Block Island we listened carefully for the fog sirens at both of these places and luffed up at short intervals to get a cast of the lead. At 5:13 A.M. we finally got bottom in 13 fathoms. Ten minutes later we got eleven fathoms.

The lashings were taken off the ground gear and it was made ready for instant use. If the surf were suddenly discovered ahead it would be a difficult task to turn and beat out with practically no wind. Suddenly, all hands were startled by the awful sound of swiftly rushing water. It sounded like shallow water swiftly rushing over rocks. I think each of us expected to feel the ship ground heavily on jagged rocks. Not knowing on which side the deep water lay, our plan was to turn and sail out over the same track which we had taken into the shallow water. In turning, it was quickly evident that we were in a heavy tide-rip and to back-track would be impossible. Down went our anchor, 40 fathoms of chain rattled out through the hawse-pipe and the bitter-end brought up with a dangerous jerk around the foremast. Well, there we were, but where that was no one knew. After a further study of the chart and a matching of the soundings over the last hour's run, it was finally decided that we had anchored on Southwest Ledge, which is directly between Montauk and Block Island, We lowered the sails and listened for Montauk and Block Island fog sirens and finally picked them up and plotted our position. Sure enough — Southwest Ledge. Why we had not picked up those fog sirens before is one of the peculiarities of sound in fog.

We remained anchored on Southwest Ledge about six hours. At noon a good breeze sprang up out of the southwest and we commenced heaving in on the cable. If you have never tried to heave in a 125-pound anchor on the end of 40 fathoms of one-half inch chain with a three-knot tide holding an uninterrupted strain and no engine to give her a kick ahead, then you surely have something to look forward to. After heaving awhile perserverance finally prevailed. We got underway and set the course to carry us just inside of Montauk. At 1:35 P.M. the fog lifted and we sighted Montauk Point Light on the weather bow about two miles distant. The first sight of land in over nine days! The fog shut in again but we anchored in Fort Pond Bay without further ado. And what a meal that night at the hotel there! Wives and bride-elect were telephoned for. They arrived the next day and completed the cruise with us, arriving at Oyster Bay on the 16th. The wedding took place on the day scheduled, though it was a close squeak.



"YOUNG MISS" • WAMSUTTA YACHT DUCK SAILS • BY RATSEY & LAPTHORN

The sloop "Young Miss" is owned by Leonard B. Schwarcz. To our letter asking if his Wamsutta sails had been satisfactory, he replied "Please accept my congratulations on turning out a sail cloth that really 'stands up' under hard driving.

"The sail seems to have held its shape remarkably well, showing not the slightest signs of bagginess.

"When ordering a new sail you can depend on it that I will insist on its being made from Wamsutta Egyptian. However, from its present condition, I do not think that it will require a new one for several years to come."

WAMSUTTA YACHT DUCK • HOWE & BAINBRIDGE • 220 COMMERCIAL STREET, BOSTON
WAMSUTTA MILLS, FOUNDED 1846, NEW BEDFORD, MASSACHUSETTS • RIDLEY WATTS & CO., SELLING AGENTS, 44 LEONARD ST. NEW YORK

TO MEET the increasing demand for Diesel-powered craft of moderate size, we have standardized the Humphreys 42- and 48-foot Sea-Cruisers. In both of these models the well-known Humphreys standards of craftsmanship will be incorporated, and through production methods we are able to offer them at prices that compare most favorably with high-grade Gasoline-powered cruisers.

The recent exhibit in the Detroit Aeronautical Show of five Diesel-powered Aeroplanes justifies our conviction that Diesel is logically the ultimate power plant for all types of vessels. As pioneers in the adaptation of Diesel power, we are in a position to offer a truly practical cruiser that comprises the three essential requisites demanded in every boat: *safety, economy* and *reliability*.

Our long years of experience have enabled us to work out a deck and cabin arrangement combining not only spaciousness but maximum accommodations for a boat of this size. These Cruisers are delivered completely equipped, their furnishings artistically refined.

If you will ring MURray Hill 2320, we will be happy to make arrangements to take you to our plant in Keyport, New Jersey, where you can inspect the various Cruisers we have under construction and be given an actual demonstration of Diesel performance. Specifications and equipment of the 43- and 48-foot Standardized Models will be sent on request. We would also be glad to confer with you in reference to our custom-built Cruisers of larger size.

PROPULSION PLANT OPTIONAL – Diesel or Gas

FREDERIC P. HUMPHREYS INC.

230 Park Avenue HUMPHREYS New York City

Cable Address: HUMPFRED

The First Airplane Reaches Bermuda

(*Continued from page 54*)

Bill climbed down on the floats and tightened up a cross wire. At 5:40 we took off. A slight wind had come up during the latter part of the night, and the swells were still running high. Bill again displayed his mastership of a difficult situation, and the plane took a strenuous licking. But we got off — and for the first time in the history of flying a plane had lived out the night on the open sea and taken off again.

As soon as we had made altitude, I went back to the radio cabin, let down the antenna, and was immediately in communication with the New York *Times*. At 6:17 I sent in my last message: "Bermuda sighted dead ahead, 6:15." A terse but eloquent tribute to the ability of our navigator.

I reeled in the antenna and crawled up forward to watch the Islands grow from a smudge on the horizon to the familiar line of green just about seven miles ahead of us. At this moment, I asked Bill how much gas we had.

"About one hour," he replied after a quick glance at one of the wing gauges.

"Fine!" I said. "I'll tell you what we'll do. Jazz over Harrington Sound on your left there, and we'll straff Tom Moore's house. Then we'll fly down over Elbow Beach, across to the hotel, down Front Street in Hamilton, and put her down just off the Inverurie."

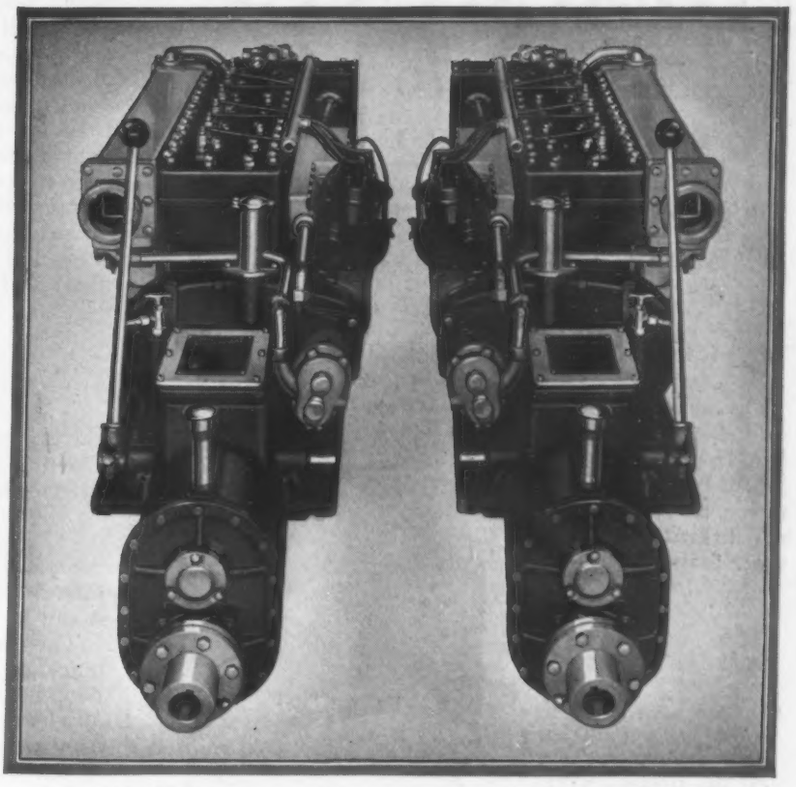
"Okay," says Bill.

"Put . . . put . . . put," says the motor, and conked, with the Islands still five miles away. There was no doubt what had happened. Once having heard that sound, it is as easily forgotten as the shake of a rattlesnake's tail. We were definitely out of gas. A dirty gas gauge had deceived Bill a moment before. We do not know to this day where it all went. He set her down again, just inside the reefs, about five miles from the Islands, our flying time being exactly nine hours and twenty minutes.

Yancey ran out the pails and caught them on the reefs just a few feet below the pontoons. These held us for a quarter of an hour — until the rope sawed through on the jagged coral. Then we started drifting, at about five miles an hour, toward New York City. The Islands were definitely retreating. We ran out an emergency antenna, and were about to call for help, when Bill's genius rose to the situation. He figured that rocking around out there, as we had been doing for the past half hour, we might have sloshed a quart of gasoline down into the equalizing tank. Lon cranked the engine. She took instantly, and Bill gave her the gun with Lon climbing through the door, and ten fathoms of rope and radio antenna streaming out behind. We had two minutes of gas — enough to set down definitely in the steamer channel just off Shelley's Bay.

Here Percy Tucker came up to us with his speed boat, and ran back to St. Georges for gas. A few minutes later Roddy Williams' *Golden Wedding* barged up alongside with Reggie Darrell at the helm and J. P. Hand on board — not to mention "Bing" Morris of the Hamilton Hotel, newspaper men and photographers. After a bit of general hand-shaking, J. P. Hand put us under arrest for flying over Bermuda without a permit, and general lack of clearance papers and similar diplomatic necessities. With "J. P.," and Percy Tucker's seven and a half gallons of gas, we flew the length of the Islands, and then set the *Pilot Radio* down, ultimately and safely, in Hamilton Harbor. A boatload of cocktails and ale put out from the Inverurie, all of which livened up our brief period of incarceration. And when the medical and custom authorities finally passed us, we were met at the dock by a host of Bermudian friends, somewhat hazily remembered through the mist of Martini drys.

100% marine UNIVERSAL 100% good



A pair of Universal Reduction Drive Sixes in a true Twin Installation. True Right-Hand and True Left-Hand Motors. 176 horse power with only 1840 pounds weight. All Universal Motors are available in right-hand and left-hand models for twin installations, and in either Direct or Reduction Drive.

At last— no more blown gaskets

Universal engineering has banished forever the uncertainties, the hazards, the trouble, and the expense caused in high-speed motors by blow-bys in cylinder head gaskets. For in the new Blue Jackets, Sixes, and Eights, Universal fastens heads to cylinder blocks with eight studs per cylinder. And Universal casts both head and cylinder block from a special non-warping alloy. You'll never blow a gasket on one of these Universals.

This is just one of the features of 100% marine, 100% good construction which distinguish the 1930 line of Universal Motors. No one else offers such a combination of advantages as are presented in the Blue Jacket—to mention only the newest addition to the Universal line. No one else offers its excellence of controlled cooling; plus its in-built carbon-filtering oil cooling system; plus a design of crankshafts and bearings to absorb the load where the load is placed; plus such perfect accessibility of working parts combined with a score of other outstanding features. These notable superiorities are typical of the way in which Universal builds for trouble-free service.

The Wheeler 33-foot, double cabin "Playmate", built by the Wheeler Shipyard, Brooklyn, N. Y. A Universal Reduction Drive Eight, turning a 20x16 propeller, drives this boat at a speed of 16 to 18 m. p. h.

There's a new kind of boating pleasure for the man who installs a Universal. And it's ten to one there's a Universal for your boat.

MARINE MOTORS

Three Blue Jackets	40-44-47 HP
The Single Cylinder	6-8 HP
The Flexifour	10-13 HP
The Super Four	35-50 HP
The Sixes	77-88 HP
The Eight	115 HP

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MARINE ELECTRIC PLANTS

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Please send me your 1930 year book containing 40 pages of valuable data on the new Universal Motors and their use.

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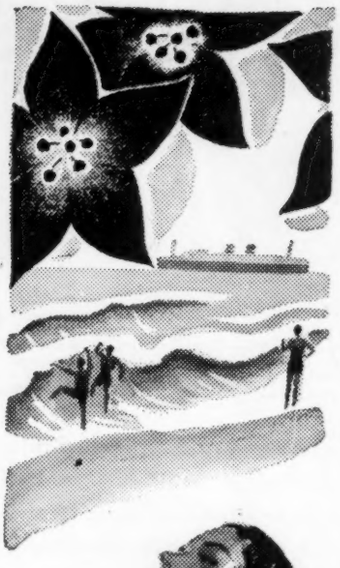
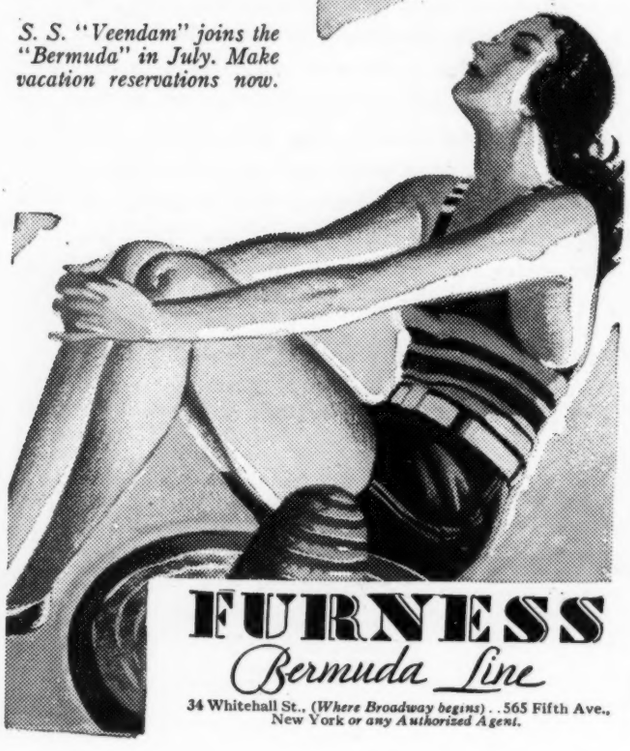


Regular sailings on new 20,000-ton motorship "Bermuda" and the famous "Ft. St. George." Ships sail direct from dock to dock. No 5 mile transfer by tender at Hamilton.

S. S. "Veendam" joins the "Bermuda" in July. Make vacation reservations now.



FURNESS

Bermuda Line

34 Whitehall St., (*Where Broadway begins*) . . 565 Fifth Ave., New York *or any Authorized Agent.*

We were unable to make the return flight due to a strut fitting on the forward port longeron which had practically pulled out, making it hazardous, if not impossible, to take off with a full load. No facilities for repairs are available in Bermuda.

With the probable erection of a radio beacon in Bermuda, within the next two years, I am assured that Bermuda will be well equipped in the way of maintenance and hangar facilities for aërial visitors. Aside from being of considerable assistance to fliers, such a beacon will be equally useful to small and large boat pilots, leading them unerringly to the Islands from at least 200 miles at sea. Radio receiving equipment, requiring no experience to operate, will be available for boats and planes at a cost well under one hundred dollars. Navigating either an airplane or yacht to Bermuda will then be simple and sure, and the already popular islands will have a constantly growing transient population.

How to Build a 26-Foot Sloop

(*Continued from page 91*)

Everything is now ready for putting on the planking. The planks are fastened to both the frames and the seam battens with brass or galvanized iron screws. In boring for the screw head plugs, a ship's auger should be used, as the ordinary bit has a lip which cuts too deeply into the plank and thus weakens the fastening. The clamp should be put in before the sheerstrake is put on so that it can be properly riveted.

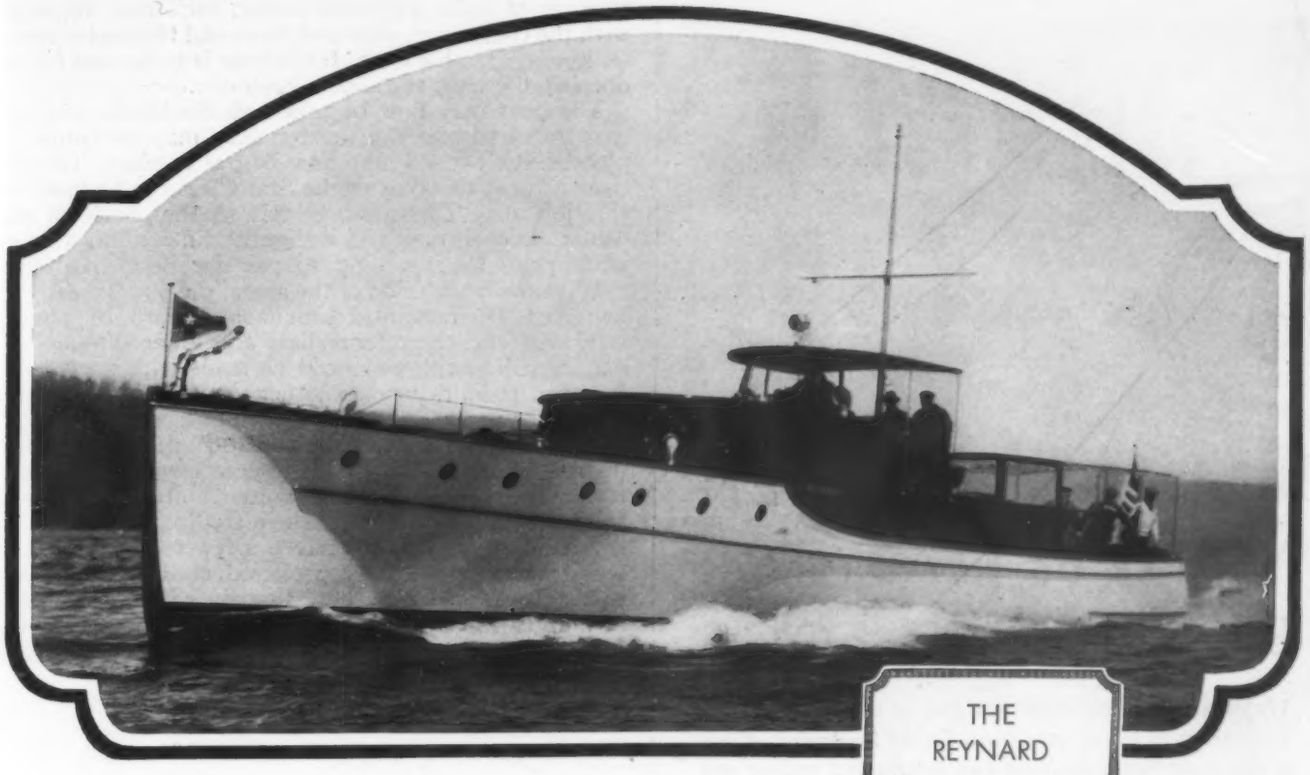
The deck beams are now sawed to shape and put in place, as are the mast step, breasthook, and mast partners. Filling blocks in way of the cabin trunk and below all cleats, and deck fittings should be put in now. The bronze deck straps should be let into the beams and fastened with screws, and the 3/8″ galvanized iron tie rods in way of the mast are now put in. The chain plates should be carefully fastened in place, as shown in the construction plan, before the deck goes on. The decking may now be applied and covered with canvas stretched tightly and turned down on the side and covered with a half round molding.

A hole is bored through the deck and through the keel and a 1¼″ diameter galvanized iron pipe is threaded into the keel. The rudder post fits inside of this. The rudder may be made of either wood or steel. If it is made of steel, a 3/16″ thick plate will be about right. The stock should be securely riveted to the plate.

The cockpit should be tackled next. On the drawing two methods of construction are shown, either one being satisfactory. If a watertight cockpit is desired, follow one plan; if not, follow the other. If the cockpit is to be provided with scuppers, these should be put in very carefully to prevent leakage around the joint in the planking. The scuppers may be crossed, i.e., the port one led to starboard and the starboard one to port, or they may lead down straight. In the latter case, it may sometimes become necessary to plug up the hole to prevent the water from flowing in when heeled down very far.

The cabin trunk sides and coaming are now ready to go on. It may be noticed that until now there has been no steam bending of any members of the structure — a considerable advantage to the amateur builder — this being the strong point of this type of boat. The forward end of the cabin trunk will have to be steamed to bend it around. The carlins in the cabin trunk will also need steaming. These have been made flat, like the frames in a canoe. This serves two purposes; first, it gives increased headroom in the cabin, and, second, it makes for ease in bending the carlins around the quick bend at the side.

Those who expect to use the cuddy merely for the



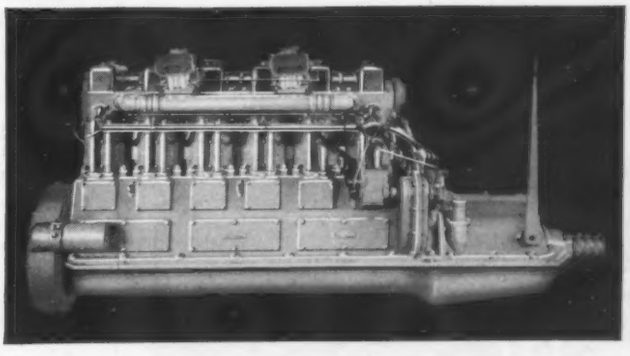
THE REYNARD

THOUSANDS OF SPEEDWAY boats and ENGINES are in yachting service... in government use and in the trade

SINCE 1904, when Consolidated began making gasoline engines, each successive model has shown improvement... a constant striving toward perfection. This spirit is exemplified by the rapid and remarkable development of SPEEDWAY ENGINES... gasoline and Diesel. Today they represent the highest attainment in engine development... masterpieces in metal, supplying dependable power indefinitely... economically. Characterized by light weight, speed, simplicity and accessability.

All Consolidated-built boats are custom made

Building only to order, Consolidated craftsmanship finds expression in creating to individual taste and preference. More than 3,000 yachts of varying size and character have been built by us for this country's leading yachtsmen in the past forty-five years. Today our facilities are larger and our output finer than ever. If you have a yacht in mind let us work out your ideas along original lines.



300 H. P. SPEEDWAY ENGINE

CONSOLIDATED SHIPBUILDING CORPORATION

MORRIS HEIGHTS NEW YORK

THEN

YOU'LL BE READY FOR BACON AND EGGS

We've heard a lot about the end of the perfect day, but permit us to put in a word for its *beginning*. Give a day a perfect beginning and the perfect ending will usually take care of itself.

Slip out of the house at break of dawn some morning — and down to the water. Then into your boat and away as the slanting light of the new day filters through the rigging and casts long shadows of masts and spars and wharves far into the sleeping waters.

Watch the water front wake-up, the sun come up over the rim of the world. Then back to your own landing as blue smoke curls from galley stove pipes and the mingled scents of fresh coffee, sizzling bacon and spluttering eggs stir your inner self to rapturous anticipations.

◆ ◆ ◆

Note: This suggestion may be followed to good advantage in a punt, catamaran, raft, or in fact a vessel of any sort. But for the utmost satisfaction a Gar Wood boat, by the craftsmen who build the Miss Americas, is recommended. Distinctive soft riding, ease of control, superb seaworthiness, luxury of finish and equipment and a glowing pride of ownership are just as important at daybreak as when the sun is high or when you drift idly on limpid moonbeams after the dance.

Fourteen New Models
30 to 55 m. p. h., $2,250 to $12,950

GAR WOOD INC.

THE GREATEST NAME IN MOTORBOATING

216 River Road Marysville, Mich.

Showroom and Factory Branch, 1856 Broadway, New York City

stowage of sails, outboard motor, etc., may dispense with the companion slide and doors and thus save themselves considerable work. If the boat is to be used for an occasional cruise, the slide is desirable.

The boat may now be taken off the blocks and the cast iron keel and the wooden skeg may be bolted in place. Deck fittings may now be put in place. The fittings as used on boats of the Star Class can be used for this job also. This must be left to the choice of the owner, as each man has a slightly different idea as to what price he is willing to pay for deck hardware.

With the completion of the spars, the boat is ready to be rigged. The masthead shrouds should be 3/16" plough steel wire and the intermediate and lower shrouds ¼" diameter. The splices should be made with great care, for upon them depends whether you will come to your anchorage under sail or at the end of a tow rope.

Of course, nothing need be said about making the sails; instructions as to how to make your own yachting uniform would be just as much in order. Only a professional sail maker is qualified to make a sail for a boat.

After the vessel has received a few coats of paint of whatever make or color is preferred, she is ready to take to her element. It is our hope that she will be thoroughly at home in it and give pleasure and satisfaction to her (by this time) horny-handed but probably happy owner.

The 1930 Albany-New York Marathon

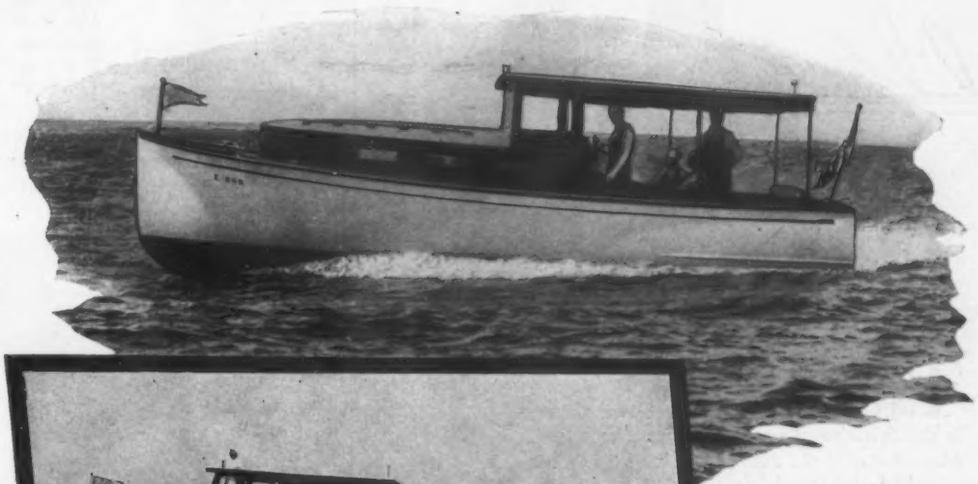
(*Continued from page 68*)

The winner of the race, J. E. Wilkinson, of Boston, racing in Division 3 because he is connected with the outboard trade, found some water in his gasoline early in the race and lost time on that account. The man who led to within sight of the finish with a Class F motor is J. T. Milliken, of St. Louis, also connected with the trade. The second to finish, Frank James, of Toronto, is an amateur and drove a Class C motor. The first three made better time than last year's winner, Jacob Dunnell, whose time was 3:36:40, an average speed of 36.63 miles per hour.

The runabouts came down the river on as sure and even a schedule as an express train — much surer, in fact, than the South Western Limited of that day, which was an hour and a half late in getting the officials from the starting line to the finish. These boats, carrying two persons each, made as little fuss as if they were just going to the next club for a cocktail, instead of 132 miles down a long and difficult course. Jack Prosser, of New York, driving a Dee Wite with a 6-cylinder, 55-horsepower Gray motor, won the YACHTING trophy at an average speed of 30.55, figured unofficially. Frank Wigglesworth, of Boston, driving a 16-foot Dodge powered by a 4-cylinder 40-horsepower Lycoming, averaged 28.93 for second place. Fifteen runabouts checked in at the start and thirteen got away. One of the non-starters blew a cylinder head gasket and the pilot of the other was "too sleepy," or so it was reported. One of the thirteen had trouble early in the race and finished after the time limit, but the dozen others came through like clockwork. Two of the dozen were driven by women.

Here's how the first 20 passed Poughkeepsie, the final figure showing how they finished — or didn't:

	Class Div.	*Fin-ished*		*Class Div.*	*Fin-ished*
1 J. T. Milliken.....	F-3	0	8 Frank James.....	C-2	2
2 Ray Pregenzer Jr..	F-2	0	9 Ben Rhymer.....	D-1	0
3 Frank M. Baker...	D-3	0	10 H. W. Breese.....	F-3	14
4 Dick Upsall.....	F-3	0	11 Philip Walker.....	D-2	0
5 Burton Mackenzie.	F-3	0	12 Jerry Reid.....	C-3	4
6 John Masterton...	F-2	0	13 Harry H. Johnson.	C-3	3
7 C. Leslie Kaston...	F-3	0	14 Carl C. Koeffler...	F-2	0



Choose a Cruisabout

for the greatest summer . . . you've ever had

The Single Cabin Cruisabout especially appeals to those who want day boating pleasures and cruising conveniences. The cabin has every accommodation for four; the cockpit, ten feet long, will seat fifteen or eighteen. Price $3585 at the factory for 13 mile speed. Slight additional cost for speeds up to 24 miles.

The Double Cabin Cruisabout has accommodations for four in the forward cabin and two in the stateroom cabin at the stern. Six people can cruise in absolute comfort and privacy on this Cruisabout. In addition, the cockpit is large enough for a day party of ten or twelve. Price $4185 at the factory for 13 mile speed. Slight additional cost for speeds up to 23 miles.

The Day Cruisabout is a glorified runabout with comfort accommodations in the small cabin. Cockpit 17 feet long is large enough for 25 people without crowding. Ideally suited for the larger inland lakes and for yacht tending, ferry, freight and passenger service. Priced $3685 at the factory for 18 mile speed. Slight additional cost for speeds up to 26 miles.

Richardson Cruisabouts

are displayed by:

Bruns-Kimball & Co.
Fifth Ave. and 15th St.
New York City

Bruns-Kimball & Co.
102 So. Fourth St.
Philadelphia, Pa.

Walter H. Moreton Corp.
1043 Commonwealth Ave.
Boston, Mass.

F. D. Homan
78 Riverside Ave.
Amityville, L. I., N. Y.

N. J. Shea
1424 Lauderdale Ave.
Lakewood, Ohio

A. M. Deering
1454 Builders Bldg.
Chicago, Ill.

Volney E. Lacey
Charlotte Station
Rochester, N. Y.

George Bender
Erie Yacht Club
Erie, Pa.

Hill-Madden Boat Corp.
Genesee Motor Ramp
Buffalo, N. Y.

Allmand, French & Thompson, Inc.
6460 E. Jefferson Ave.
Detroit, Mich.

Flood Gate Motor Boat Agency
Fourteenth & Water Sts., S. W.
Washington, D. C.

Mississippi Valley Yacht Sales Co.
Times Building
Alton, Ill.

T. B. F. Benson
371 Bay St.
Toronto, Ont., Canada

Peden Co.
Houston, Texas

C. O. Horstman
813 S. Washington St.
Peoria, Ill.

Boardman & Flower
1740 Van Ness Ave.
San Francisco, Cal.

J. A. Scarlett
436 E. Second St.
Cincinnati, Ohio

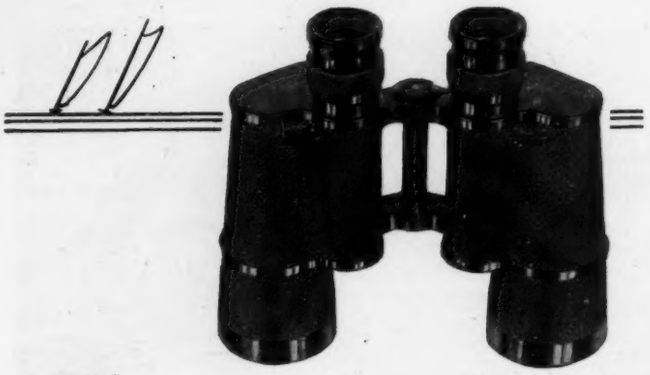
Charles L. Killam
New Haven, Conn.

Edward Fell Jardine
410 Carson Ave.
Atlantic City, N. J.

Hubert Johnson
Bay Head, N. J.

Booklet "F" mailed free if you write to Richardson Boat Co., Inc. 366 Sweeney Street, North Tonawanda, N. Y.

Richardson Cruisabouts



THE Carl Zeiss "Binoctar", shown above, is the favorite of yachtsmen, and *the official binocular of the U. S. Navy.* It is a night glass of unusually high light transmitting capacity. And, with its magnification of 7x, the field of view is extremely wide—128 yards at a distance of 1000 yards ... This is but one ot many models of Zeiss Binoculars. See them at your dealer's. Write for catalogue.

CARL ZEISS, INC., 485 FIFTH AVE., NEW YORK
728 South Hill Street, Los Angeles

CARL ZEISS
BINOCULARS

CARL ZEISS JENA

Complete Investment Service
UPTOWN

AT our FIFTH AVENUE office—located at the corner of 57th Street, we have provided every facility for investors and traders, including a complete statistical service on listed and unlisted securities.

Our facilities are at the disposal not only of resident uptown investors but particularly of those whose travels bring them intermittently to our vicinity.

HORNBLOWER & WEEKS
ESTABLISHED 1888

BOSTON · NEW YORK · CHICAGO · CLEVELAND · DETROIT · PROVIDENCE · PORTLAND, ME. · PITTSBURGH

731 Fifth Avenue
Southeast corner of 57th Street
NEW YORK CITY
Downtown Office at 42 BROADWAY

Members of the NEW YORK, BOSTON, CHICAGO, CLEVELAND, PITTSBURGH *and* DETROIT *Stock Exchanges and the* NEW YORK *Curb Exchange*

	Class Div.	Finished		Class Div.	Finished
15 William Wray	D-3	0	18 Frank H. White...	D-2	0
16 N. F. McKenzie...	C-2	0	19 R. H. Snadecki ...	D-1	8
17 J. E. Wilkinson....	D-3	1	20 L. R. Woodside....	C-3	0

Speeds of the class leaders, figured unofficially from the official times at Poughkeepsie (computed as 69 miles from the starting line) and at the finish follow:

Jack Prosser and crew of the Dee Wite Inboard Runabout which won the YACHTING Cup in that class.

	First Half	Second Half	Full Race
Milliken, F-3	42.68	....	....
Baker, D-3	40.58	....	....
Wilkinson, D-3	37.98	39.50	38.71
James, C-2	39.79	36.14	37.88
Roberts, B-2	32.34	33.88	32.99
Breese, F-3	39.43	27.30	32.52
Prosser, R'b't	30.44	30.68	30.55
Wigglesworth, R'b't.	29.89	28.46	28.93

THE WINNERS

Haynes-Griffin $500 cash prize for first outboard to finish — J. E. Wilkinson, Boston

YACHTING trophy for first inboard runabout — Jack Prosser, New York

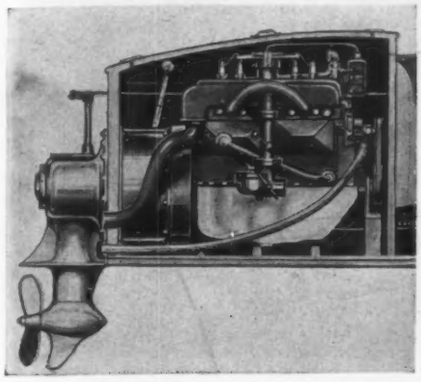
Yacht Moteur Club de France trophy for first amateur (Divisions 1 and 2) — Frank James, Toronto

INBOARD RUNABOUTS

Driver	Motor	Hull	Time	Position in Race
Jack Prosser	Gray	Dee Wite	4:19:43	21
Frank Wigglesworth	Lycoming	Dodge	4:34:18	24
Joe Van Blerck	Van Blerck	Sea Sled	4:50:50	28
OUTBOARDS — CLASS D, DIVISION 3				
J. E. Wilkinson	Johnson	Ludington	3:25:03	1
Jacob Dunnell	Johnson	Ludington	3:58:06	10
Capt. W. J. Snadecki	Johnson	Pigeon Hollow Spar	4:00:48	13
CLASS D, DIVISION 2				
David Hundertmark	Johnson	Penn Yan	3:42:08	5
C. P. Stevens, Jr.	Johnson	Ludington	3:51:17	6
R. H. Snadecki (Div. 1)	Johnson	Pigeon Hollow Spar	3:54:12	8
CLASS C, DIVISION 3				
Harry H. Johnson	Evinrude	Claus Johnson	3:34:50	3
Jerry Reid	Evinrude	D. N. Kelley	3:40:06	4
W. B. Tuck	Johnson	Ludington	3:58:05	9
CLASS C. DIVISION 2				
Frank James	Johnson	Frank James	3:29:28	2
Wm. C. Schanz	Evinrude	D. N. Kelley	3:53:26	7
Fred Jacoby, Jr.	Johnson	Jacoby	4:00:10	11
CLASS B, DIVISION 2				
Ted Roberts	Johnson	Century	4:00:32	12
Harold E. Ballard	Johnson	Midland	4:27:07	19
Wm. Feldhusen	Johnson	E. A. Tyrolf, Jr.	5:14:00	33
CLASS F, DIVISION 3				
H. W. Breese	Elto	Hooton	4:04:15	14

Lyon-Tuttle Acquire New Yard

The present yard of the Lyon-Tuttle Corporation, at City Island, having proved inadequate for their rapidly expanding business, Howard Lyon has acquired the well-known yacht yard of B. F. Wood, Inc., City Island, and will incorporate it with the Lyon-Tuttle organization. The Wood yard is well known to yachtsmen, and is excellently equipped with shops, sheds and marine railways.



With the Capitol geared drive the motor may be installed away aft.

A Stern Drive

The latest types of light weight, compact marine motors lend themselves admirably to installation in the stern of a runabout or small cruiser, leaving the rest of the boat clear for passengers. A geared drive transmits the power to the propeller, doing away with the usual long shaft with its bearings and stuffing box. These rigs are attached to the transom, are neat and trim in appearance and take up little room. On first looking at a boat fitted with one of these devices, one wonders where the motor is placed, for the after deck seems only a little longer than in a boat with her power plant amidships.

A most successful drive is that manufactured by D. W. Onan & Sons in connection with the famous Capitol equipment of the Auto Engine Works. It is of high grade material throughout and is carefully made. Gears are spiral bevel and are quiet in operation. The gear housing is of aluminum, water cooled, and fitted with ball bearings.

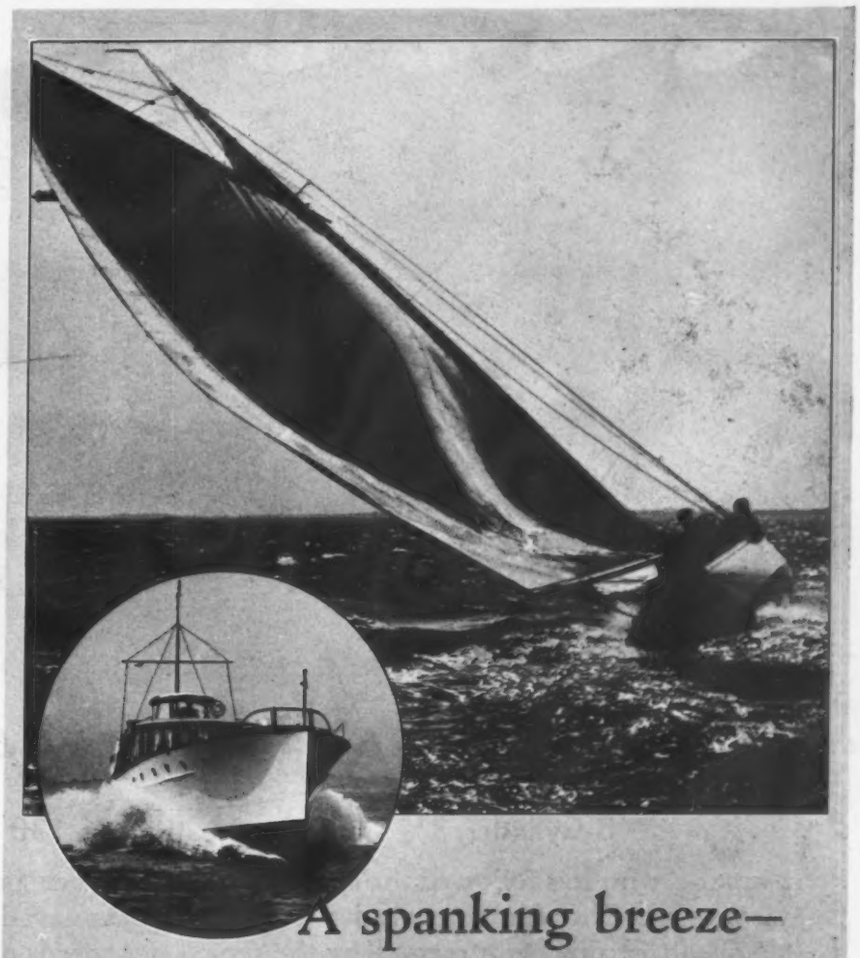
The Onan Co. also turns out a neat line of self-contained electric generator sets which are in use all over the world.

Dailey Joins Boyd-Martin

A. W. Dailey, better known to the industry as "Jack," has joined the Boyd-Martin Boat Co. and will be in charge of sales. Mr. Dailey brings to his new position a wide knowledge of boats and outboard motors. The company's production facilities are to be increased and improved and seven new models of outboard boats are offered for the season of 1930.

For Bright Work

An excellent polish, made particularly for marine use and designed for salt water service, is Signal liquid metal polish. It works quickly, leaves no residue and the metal polished holds its brilliancy. It is extensively used by a number of steamship companies and by various government departments. It may also be had in paste form.



A spanking breeze—
a choppy sea—lee rail awash.

—and a camera that captures all the thrill in a thousandth of a second! That's Graflex!

Great photographs are the windows through which past pleasures are seen again . . . lived again.

This summer, be sure there's a Graflex aboard your boat! Races and regattas . . . water sports . . . week end cruises—and then September . . . the Cup Race that thrills the world!

This is *THE* summer for the finest of cameras.

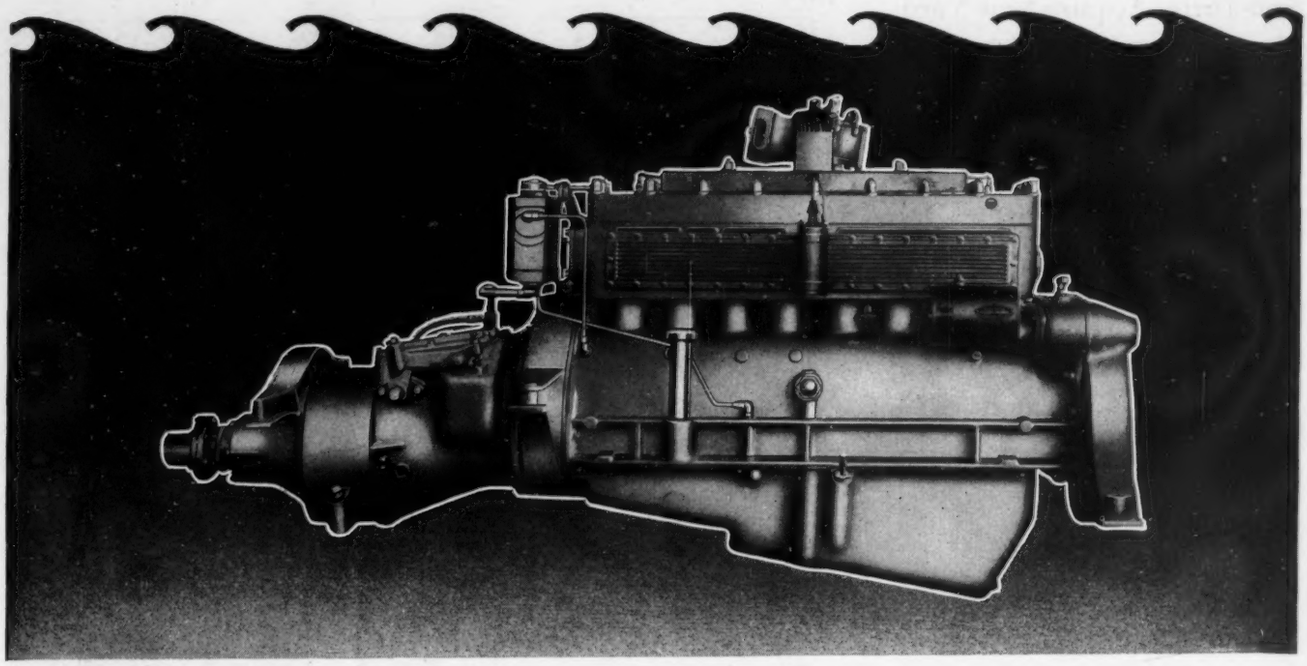
Graflex pictures live. For Art . . . for Action . . . for scenes of rare beauty, portraits that capture real personality . . . Graflex. Greater certainty of focus, greater artistry of composition. When it's in focus in your *Graflex* finder, it's in focus on your film.

The CAMERA For More *Interesting* Pictures

GRAFLEX

FOLMER GRAFLEX CORP. . . . ROCHESTER. N.Y.

FOLMER GRAFLEX CORPORATION, *Dept. 56*, ROCHESTER, N. Y.
I want to see the booklet that tells how more interesting pictures are being made. Please send "Why a Graflex?" to name and address written on margin of this page.



CHRYSLER MAJESTIC MARINE ENGINE

8-Cylinder, 3½" bore by 5" stroke — 130 - 150 horsepower

Anyone who has followed the spectacular success of Chrysler six-cylinder marine engines will not be surprised by the sensation created by the new Majestic Eight.

It is in every way a very definite expression of Chrysler traditions of design and performance in the marine engine field, and has already been adopted by a number of leading builders for their larger and more commodious types of boats.

The new Majestic provides 130-150 B.H.P. at 2400 to 3200 R.P.M., or, equipped with Chrysler built-in 2 to 1 reduction gear, makes available the same power at propeller speeds of 1200 to 1600 R. P. M.

Important features include: Down-draft Carburetion, Positive Gasoline Pump, New Hot-spot Manifold, Oil Cooler, Rugged Helical Timing Gears, and Chrysler-built Reverse Gear, with outside reverse band adjustment.

For further information, address Marine Engine Division, Chrysler Corporation, Detroit, Michigan.

DISTRIBUTORS

BOARDMAN & FLOWER
San Francisco, Cal.

SEATTLE MARINE SUPPLY CO.
Seattle, Washington

YACHT & MOTOR SALES CORPORATION
Wilmington, California

J. H. HUTCHINSON
Alexandria Bay, N. Y.

BOEING AIRCRAFT OF CANADA, LIMITED
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MARINE EQUIPMENT & SUPPLY COMPANY, INC., Philadelphia, Pa.

SUTTER BROTHERS
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MADDOX ENGINEERING COMPANY
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SERVICE STATIONS

CONSOLIDATED SHIPBUILDING CORPORATION
New York City

WHEELER SHIPYARD
Brooklyn, N. Y.

ROY M. BREWSTER
Bay Shore, L. I., N. Y.

Chrysler *MARINE ENGINES*

CHRYSLER MOTORS PRODUCT

The *General Wood* Launched

On April 19th, near Leiden, Holland, the 69-ft. steel Diesel motor cruiser *General Wood* was launched amid impressive ceremonies, the vessel having been built for the Leonard Wood Memorial from designs by F. Van Rossen Hoogendyk, of New York. The new craft is 69 feet long, 13 feet 2 inches beam and 3 feet 8 inches draft, and is powered with a pair of M. W. M. Benz Diesel motors of 60 h.p. each, which will give her a cruising speed of 12 miles an hour. The accommodations include quarters forward for the crew, galley, deck dining saloon, bridge deck, two double staterooms and bath for the medical officers, and provision on deck for several patients. The *General Wood* will be used in service between the islands of the Philippines and the Island leper colony at Culion, Palawen, P. I.

Hydrographic Office Moves

On April 10th, the U. S. Navy Branch Hydrographic Office moved from 78 Broad St. to its new quarters in room 627, 6 State St., New York City.

Captain K. M. Bennett, U. S. Navy, is the officer in charge.

Plenty of Indoako

Despite the serious fire which occurred at their Philippine mill, the Indiana Quartered Oak Co., are not running short of their well-known Indoako wood, or Philippine mahogany, as they have on hand and in transit some 4,500,000 feet, and 14,000,000 feet in pile in the Philippines, which escaped the fire. In addition to their large stock of Indoako lumber, panels, doors, flooring, etc., they also carry a good stock of genuine mahogany and teak at their Long Island City yard.

Alura II

An attractive yacht has been built by F. D. Lawley of Quincy, Mass., for James Scripps Booth of Detroit, from designs by John H. Wells, Inc. She is 54 feet over all, 53 feet water line, 12 feet 4 inches beam and 3 feet 8 inches draft. The hull is framed with oak and double planked with cedar, copper fastened. The finish outside is in mahogany and below decks is tinted enamel with mahogany trim. The power plant consists of two 175 h.p. Hall-Scott motors which, turning twin propellers, drive her at a 19-mile pace. Many interesting details have been worked out on the boat in the way of electric toilets, positive ventilation and novel equipment.

Webbperfection Ranges Approved

Webbperfection Ranges have been stamped with the approval of the Bureau of Construction and Repair of the Navy Department, and are now on the list maintained by that bureau.

Elisha Webb & Son Co., Philadelphia, are the manufacturers.

Oberdorfer Outlook Promising

The M. L. Oberdorfer Brass Co., of Syracuse, N. Y., manufacturers of marine pumps and safety devices, announces that now that the season is getting into full swing their outlook is exceedingly promising for a big year. The two safety devices which this company is featuring are attracting much attention, and both the Oberdorfer Backfire Trap, a preventative of fire caused by backfiring of the motor, and the Oberdorfer

over the BORDER . . .
TO *Golf* . . .
AT ST. ANDREWS

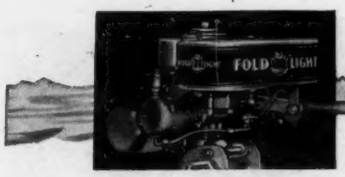
A golf-ground famous to golfers in-the-know is St. Andrews . . . crack players bring the family and stay all summer.

The golf-playing Scots of Canada made St. Andrews on the model of its Scottish namesake . . . and made it right! Two cool, moist, sea-air courses by the Bay of Fundy . . . the eighteen, thrilling even to experts . . . the nine for learners . . . and a handsome hotel plant with just everything to keep the family contented. By motor . . . 145 miles beyond Bangor on U. S. 1 . . . or by yacht . . . or by rail. Tennis . . . bowling on the green . . . a big bathing cove with Continental cabanas.

The Algonquin opens June 21 . . . rates and information from Canadian Pacific, 344 Madison Ave., at 44th, New York . . . 405 Boylston St., Boston . . . 71 E. Jackson Blvd., Chicago . . . 32 other offices. Or write

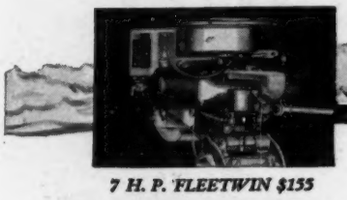
Hotel Algonquin
ST. ANDREWS BY-THE-SEA
New Brunswick, Canada
A CANADIAN PACIFIC HOTEL

3 to 45 MILES *per* HOUR



3 to 11 miles per hour

2¾ H. P. FOLD-LIGHT $145

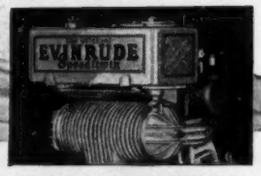


4 to 25 miles per hour

7 H. P. FLEETWIN $155

5 to 35 miles per hour

14 H. P. FASTWIN $190



6 to 44 miles per hour

20 H. P. SPEEDITWIN $220

6 to 45 miles per hour

22 H. P. SPEEDITWIN
Cord Starting $250; Electric $315

ELECTRIC STARTING

ELECTRIC starting, automatic generating, electric lighting—for years the dream of outboard engineers and boatsmen using outboards of the larger sizes — *now its true!* Ten times faster than human hands could spin it, Evinrude 22 h.p. Speeditwin whirls to an instant effortless start at the touch of a switch. No clutch to disengage, no springs, no gears, no grind—actually more simple than automobile starting.

All prices f. o. b. factory

——— a Model for You!

WHATEVER your favorite water recreation — fishing, hunting, aquaplaning, cruising, canoeing, racing or runabouting; whatever size outboard you plan into your vacation; whatever the craft you own or are considering; whatever speed range you wish, from 3 to 45 miles per hour—the correct answer is as near as your Evinrude dealer. If you do not know him, it will be a pleasure to give you his name and address.

Easy Terms as Low as $35 Down

Deposit approximately 25% of the purchase price and take six or eight months on the balance. Right now, invest only $35 and enjoy *Fold-Light*—carry it anywhere as easily as a suitcase. It f-o-l-d-s to only 11½x13¾x17 inches and weighs only 29 pounds. Or choose *7 H. P. Fleetwin,* requiring only $45 down.

Here is another outstanding value! Evinrude *Fastwin!* Only $50 down. Full 14 horsepower, easy starting, underwater silenced, Propello-Vacuum cooled, and with ball and roller bearings on connecting rods, crankshaft and drive and propeller shafts.

Then there's Evinrude *Speeditwin,* world's champion in its class, and built in two sizes—22 and 20 H. P., at $250 and $220 with cord starting. Electric starting, 22 H. P. only, $315. Down payments *$60, $60* and *$75* respectively.

Write for free copy of 24-page Evinrude Year Book describing all models in detail.

EVINRUDE

EVINRUDE DIVISION, Outboard Motors Corporation
652-27th STREET OLE EVINRUDE, *President* MILWAUKEE, WIS.

automatic Electric Bilge Pump, which brings protection against unexpected leakage, are enjoying wide sales.

A Hazardous Trip

Bound from Portland, Maine, to Portland, Oregon, Mr. and Mrs. Lee Morrison are now well on their way on their risky 6400-mile trip in their little 16-foot outboard-driven craft, having left the Maine port on April 1st, and stopped a day or so in Boston on April 9th. The Morrisons are trusting their lives not only to boat and motor, but to Kapo Playboy Kantsink Waistcoats, which they will wear religiously every minute of the trip. Aside from being the most buoyant material known, the insulating qualities possessed by Kapo Ceibasilk will protect them from excessive heat and cold.

An installation of a Crosley radio on a Huckins Fairform Flyer.

Get a Crosley Radio

There is now no reason whatever why the owner of any yacht, no matter how small, should not enjoy the pleasures of perfect radio reception afloat, for the Crosley Radio Co., of Cincinnati, pioneers in the radio field, have developed a small, compact and remarkably efficient battery-operated screen grid set which is admirably adapted to use on the water. The accompanying photograph shows a neat installation of a Crosley set on a Huckins Fairform Flyer, which has given splendid results.

New *Coast Pilot*

If you are going to visit the inlets and bays of the New Jersey coast you will need the new *Coast Pilot* for the inside waters between Sandy Hook and Cape May. It contains detailed descriptions and sailing directions for the waters in the district as well as general information as to bridge regulations, fish weirs, aids to navigation, tides, currents, etc. Copies may be obtained from the Inspector, Coast and Geodetic Survey Field Station, 6 State St., New York, or from your nautical instrument dealer.

For Sailors

Every sailorman will find much of interest in the new catalogue issued by Wilcox, Crittenden & Co., Inc. Besides a complete description of the extensive line of marine hardware manufactured by the company, there is information about the compass, lights, charts, buoys, the rules of the road and so on. A free copy may be obtained by writing to the company.

WHY FAMOUS MEN OF THE DAY USE BARBASOL

*"*Barbasol makes each day's shave a 'Birdie.' It strokes well under par for the facial course every time; quick, clean, easy — and never in the 'rough.' Every face is a fairway when this modern and different shaving cream softens the beard. And I like to play around without having to get up a lather; no rubbing — no brush. It's the Champion of all the shaves."*

Craig Wood

**Barbasol testimonials are not paid for.*

Craig Wood, golf's newest star, who is the present Hawaiian Open Champion, Oklahoma City Open Champion, and who recently added to his triumphs the conquest of Horton Smith in the Professional Golfers' Championship.

"For a perfect shaving score every day . . . Barbasol"

IF you haven't used Barbasol lately you're missing a lot, according to hundreds of letters which pour in telling about the wonders of this modern, different, *quick* shave. It must be sincere praise because this chorus of approval is *unsolicited*.

"And the beauty of it is, the razor doesn't pull," writes N. R. G., California. "Rather drive a car without a self-starter than go back to the old brush," says W. E. L., of New York. "No other to compare with this smooth, clean shave," rejoices M. W. in New Jersey. "Soft and smooth; no burning," writes J. T. K., of Missouri, and so it goes. (Names on request if you like.)

It's the easy, quick *simplicity* of Barbasol that makes millions of happy shaves. But *you've got to use it right*. Try it, men, THIS way and, if you follow these directions, *you'll be following the crowd:*

1 Wet your face. Leave it wet. **2** Spread on Barbasol. DON'T rub it in. **3** Wet a good blade and—Shave.

You'll think it's some kind of magic, the way the toughest beard is softened; the way the blade slips along — cuts crisp — no pull — no scraping — and leaves the face softened, refreshed. And DON'T FORGET, you get that kind of super-shave without lathering-up — no brush, no rub. And blades last longer, too.

It's easy to be a Barbasol believer. Try it in the morning and give your face a glad surprise. Generous tubes at all druggists', 35c and 65c. The Barbasol Co., Indianapolis, Ind.

BARBASOL SKIN FRESHENER

As a bracer for the face, there's nothing like Barbasol Skin Freshener. Slap it on face or neck; morning, noon, or night; for a quick "pick-up."

Barbasol

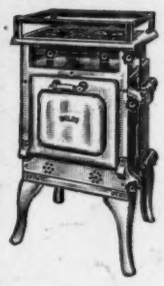
For Modern Shaving

NO BRUSHING — NO LATHERING — NO RUBBING

WILCO "BLU-FLAME"

Safety Cooking Gas

The combination of a WILCO Safety Gas Cook Stove and the Improved "Blu-Flame" system offers the yachtsman every convenience now enjoyed in the modern home.

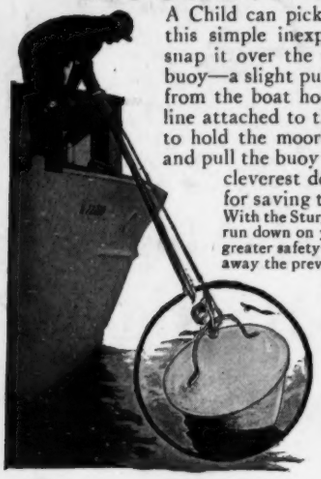


With this system on your boat all the delicious menus now prepared in home kitchens can be served quickly, tastily, economically and in coolest comfort.

10 models meet every requirement

KUHLS

STURGES "*Jiffy*" MOORING SNAP



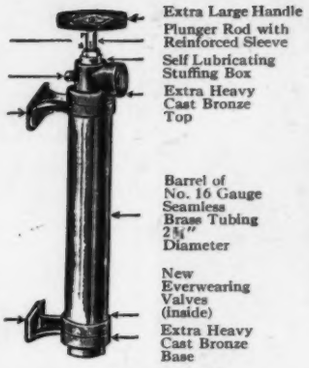
A Child can pick up a mooring with this simple inexpensive device. Just snap it over the ring in the mooring buoy—a slight pull separates the snap from the boat hook pole, and a light line attached to the snap enables you to hold the mooring, check headway and pull the buoy inboard—one of the cleverest devices ever invented for saving time and trouble.

With the Sturges "Jiffy" Snap you can run down on your mooring with much greater safety than ever before, taking away the previous worries of having to consider Wind and Tide. On sail-boats, one-man motor boats and in bad weather it is worth many times its cost.

Price in unpolished Bronze . $4.90

Polished Bronze 6.50

Nickel Plated and Chromium Plated can also be furnished.


Extra Knuckle Clearance
Priming Plug
Swivel Adjustable Bracket Permitting Port or Starboard Mounting
Swivel Adjustable Bracket Permitting Port or Starboard Mounting
Extra Large Handle
Plunger Rod with Reinforced Sleeve
Self Lubricating Stuffing Box
Extra Heavy Cast Bronze Top
Barrel of No. 16 Gauge Seamless Brass Tubing 2¾" Diameter
New Everwearing Valves (inside)
Extra Heavy Cast Bronze Base

"WILCO" IMPROVED *Bilge Pump*

A "Wilco" specialty — this popular bilge pump is widely imitated but absolutely unequalled. Built to stand hard usage and absolutely fool proof — nothing can get out of order. 1¼ in. supply, 1½ in. discharge. Length 23 in.

PRICE $8.50

Combination Coverall and Life Preserver Suit

Made of durable herringbone drill (not waterproof) in one-piece style, in white color only. Entire suit is triple needle stitched throughout and bar-tacked at important seams. Hookless Fastener all the way down front. The life-preserver feature is accomplished by means of two compartments on each side in front and one large compartment in back, holding in all eight tubes of rubber filled with finest quality Kapok. These rubber tubes are vulcanized and easily removed for laundering purposes. The compartments are so arranged as to allow plenty of freedom of movement. Kapok cannot come in contact with water. A double purpose garment as this suit eliminates the use of any other life preserver.

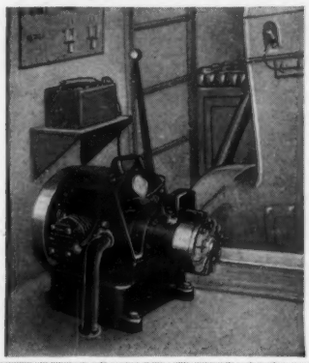
PRICE $15.00

Come in and let us fit you to a UTE, or send us your check and measurements and we will ship you a UTE postpaid. Sizes Small, Medium & Large. Extra Large 10% extra.

LIVE DEALERS SHOULD WRITE FOR WILLIS' DISCOUNTS

ELECTRIC LIGHTS ALWAYS

with this independent



BRANFORD LIGHTING PLANT

A powerful little gasolene motor direct connected to an efficient generator. Weighs only 50 pounds. Requires only one small storage battery. Quickly installed anywhere. Will keep starting and radio batteries always charged and operate small pumps and galley conveniences. An ideal independent source of electricity for small motor boats, sail boats and house boats.

PRICE, 6-Volts $140
12-Volts 145

Recommended E-J-WILLIS EQUIPMENT

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